3.3 Biological Resources

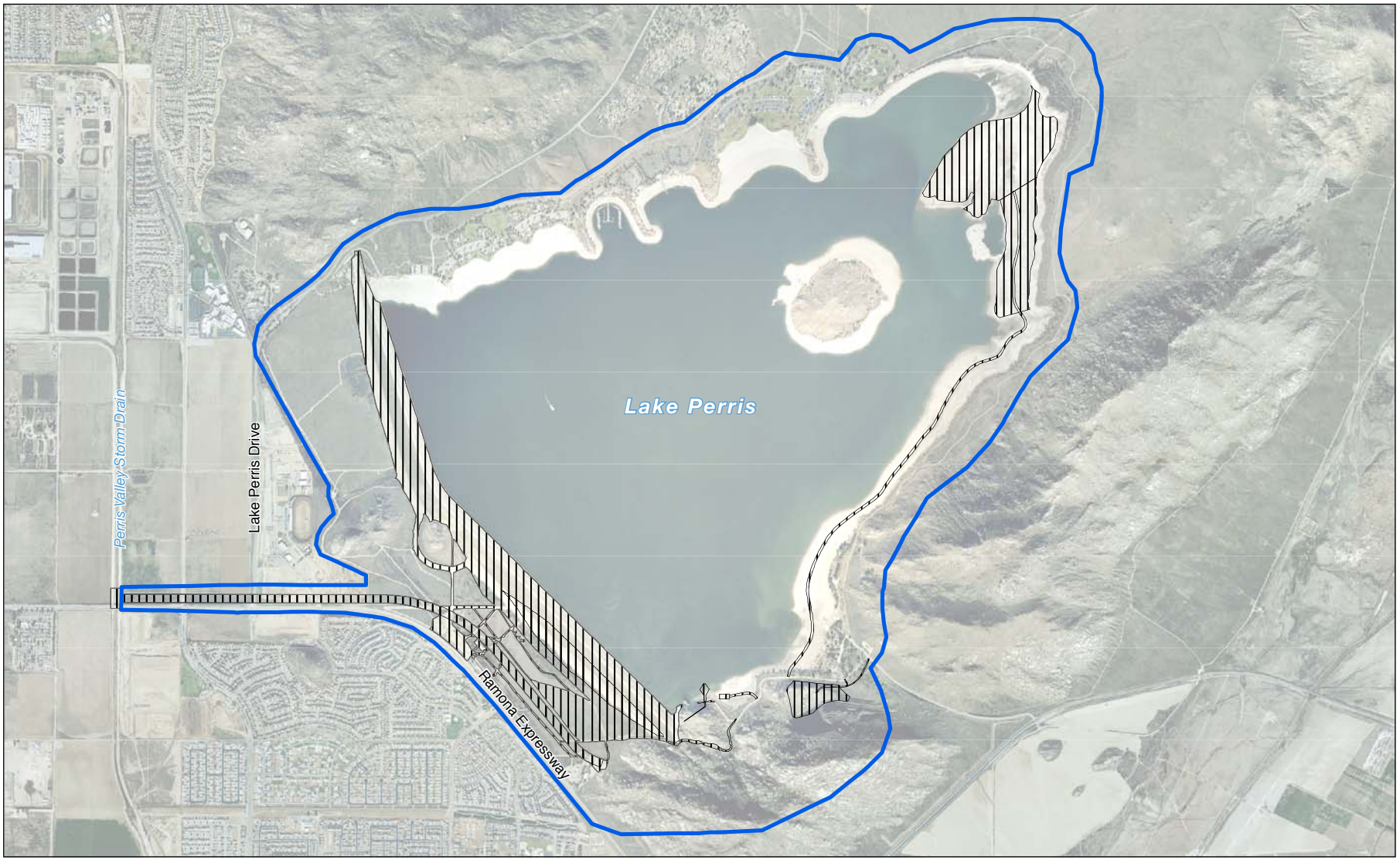
This section establishes the existing conditions and provides an evaluation of potential impacts to biological resources associated with the proposed project. A Biological Resources Technical Report that provides the primary source of the following section is included in **Appendix C**.

3.3.1 Methods

The setting and analysis of biological resources is based on a review of available literature, consultation with resource agencies, and extensive field surveys within the project study area. ESA and Psomas staff contacted the local field offices of Regional Conservation Authority (RCA), the CDFG, the U.S. Fish and Wildlife Service (USFWS), and U.S. Army Corps of Engineers (Corps) to identify agency concerns regarding the proposed project site. The gathering of available information and agency concerns was followed by extensive on-site field surveys within the biological survey area conducted by botanists and wildlife biologists. The area surveyed is shown in **Figure 3.3-1**. The purpose of the field surveys was to determine whether special-status plant and wildlife species occur or have the potential to occur within the habitat types on the proposed project site. During the field surveys, personnel searched for listed and sensitive plant and wildlife species, as well as habitat with the potential to support those species. Plant and wildlife species observed during field reconnaissance were recorded for inclusion in this analysis. The location and extent of potential jurisdictional waters of the United States and waters of the State were mapped as a part of the field studies.

A modified protocol survey for least Bell's vireo (*Vireo bellii pusillus*) was conducted during the months of June and July in riparian areas near the lake and dam. Trapping surveys for Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) were conducted in September 2007. A protocol survey for coastal California gnatcatcher (*Polioptila californica californica*) was conducted during the months of July and August. A habitat assessment of the riparian vegetation along the northeastern portion of the lake and a waterfowl analysis was conducted in May 2009. The reports of findings for all abovementioned surveys are included in Appendix C.

As specified at the start of Section 3 (Environmental Setting, Impacts and Mitigation Measures), baseline conditions for establishing the existing setting for the analysis of project impacts on biological resources is a full Lake Perris at the 1588-foot water surface elevation (pre-drawdown conditions). The analysis of project impacts takes into account the effects of the emergency drawdown and takes into account the colonization and flooding of the recently exposed lake bottom that now supports habitat of pioneer plant species. In addition, the effects of the drawdown on the riparian habitat along the northeastern portion of the lake and the riparian habitats along the southeast perimeter of the lake are included in the analysis of biological resources.



Biological Survey Area Boundary
Project Footprint

0 3,500
Feet

SOURCE: GlobeXplorer, 2007; DWR, 2007; PSOMAS, 2007.

DWR - Perris Dam Remediation Program . 206008.02

Figure 3.3-1
Biological Survey Area

3.3.2 Regional Setting

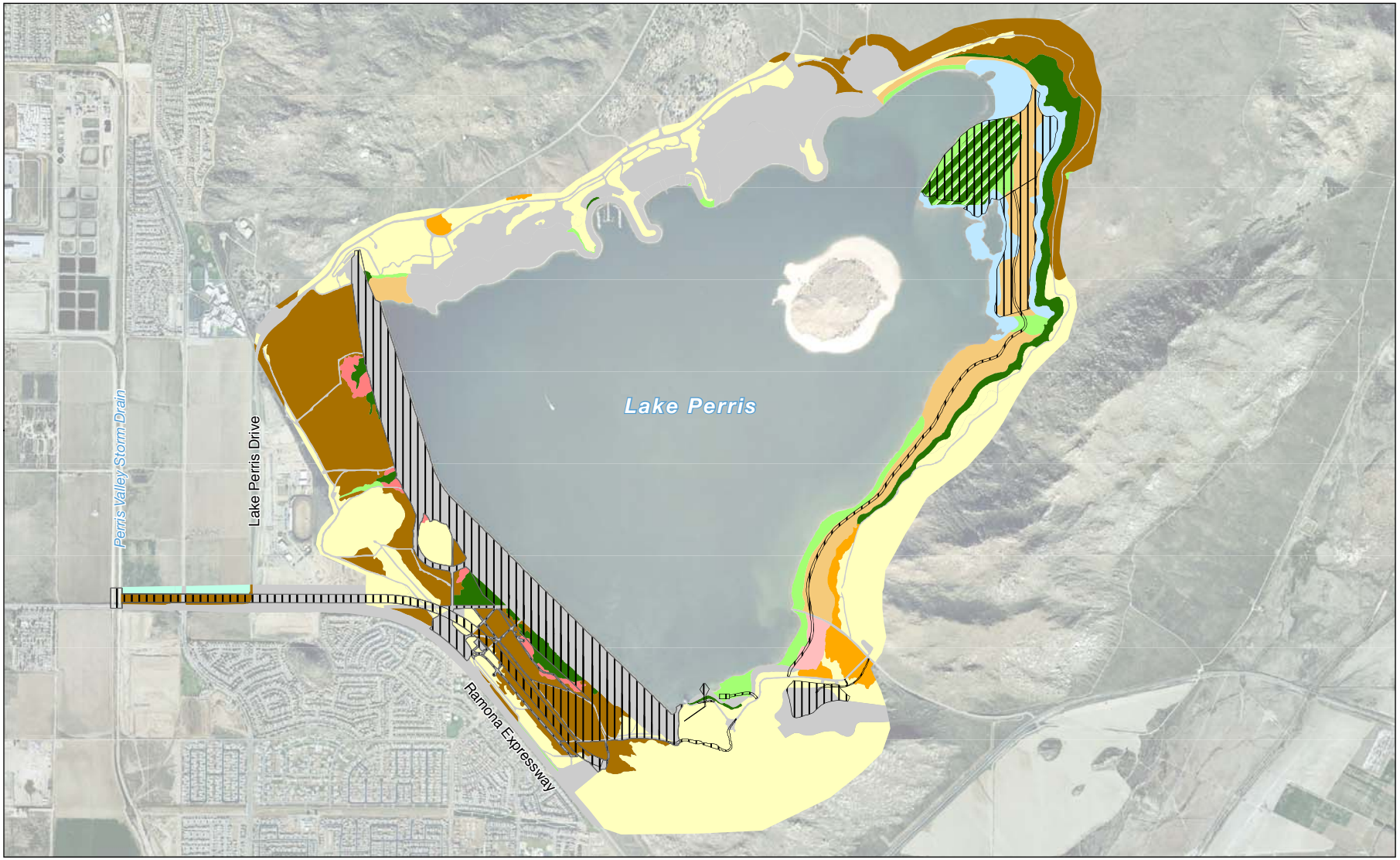
Lake Perris is located within the southwestern California subregion of the California floristic province (Hickman, 1993). Perris Dam impounds Lake Perris, which is entirely within the Lake Perris SRA located between the cities of Moreno Valley and Perris in an unincorporated area of western Riverside County, approximately 15 miles south of the City of Riverside and 65 miles east of the City of Los Angeles. The proposed project site is located in the foothills of the Bernasconi Hills, the adjacent Lake Perris and the relatively level land below the dam, between approximately 1400 to 2000 feet amsl. Currently, the majority of the proposed project site would occur on public land. The land uses in the project vicinity include undeveloped/open space of the San Jacinto Mountain Range to the northeast and residential homes to the south and west. Lake Perris is a man-made lake and recreation area bounded by the Bernasconi Hills to the southeast and a number of other small hills to the north. The San Jacinto Mountain Range lies to the northeast. The proposed project site receives approximately 1.1 million visitors each year for activities that include water skiing, jet skiing, fishing, hunting, camping, hiking, rock climbing, horseback riding, bicycling, and wildlife watching. The Perris Fairgrounds immediately adjacent to the Lake Perris SRA to the west supports a motor sports complex. The San Jacinto Wildlife Area is immediately east of the Lake Perris SRA. The surrounding area is composed of a mosaic of suburban, developed land and open space/natural areas, with the majority of natural habitat being found in the San Jacinto Mountain range to the northeast.

Natural habitats around Lake Perris are composed primarily of Riversidean sage scrub, willow scrub, and non-native annual grassland. The surrounding lands are relatively dry with vegetation that varies from a dense association of sage scrub related species on the drier south facing slopes and chaparral related species on the north facing slopes due to greater soil moisture retention, to a sparse association of grasses, forbs and scattered sage scrub shrubs in the flatter areas near the toes of the surrounding foothill slopes. Soils range from a thin mantle over rocks on steep slopes, to deeper sandy friable soils in the flatlands and along the shores of Lake Perris.

The proposed project site lies within the Western Riverside County MSHCP area. The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on conservation of plant and wildlife species and their associated habitats in western Riverside County. The MSHCP establishes a framework and mechanism for projects to comply with State and federal endangered species regulations.

3.3.3 Project Setting – Habitat Types

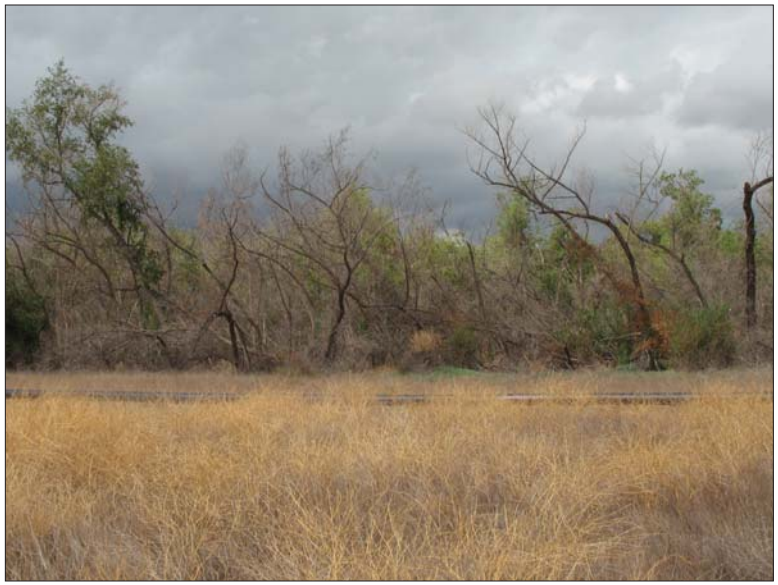
The study area supports 10 plant communities, 13 associated sub-communities, and four non-vegetated features within and around the vicinity of the proposed project area identified during the field surveys. **Figure 3.3-2** maps plant communities identified in the project area. **Figures 3.3-3** through **Figure 3.3-5** provide photographs of vegetation types. Some of these plant communities and non-vegetated features existed prior to the lake drawdown, some of the plant communities and features are purely a result of the drawdown, and some fall into both categories as shown in **Table 3.3-1**, below. **Table 3.3-2** includes a list of plant species observed during field reconnaissance conducted for this study.



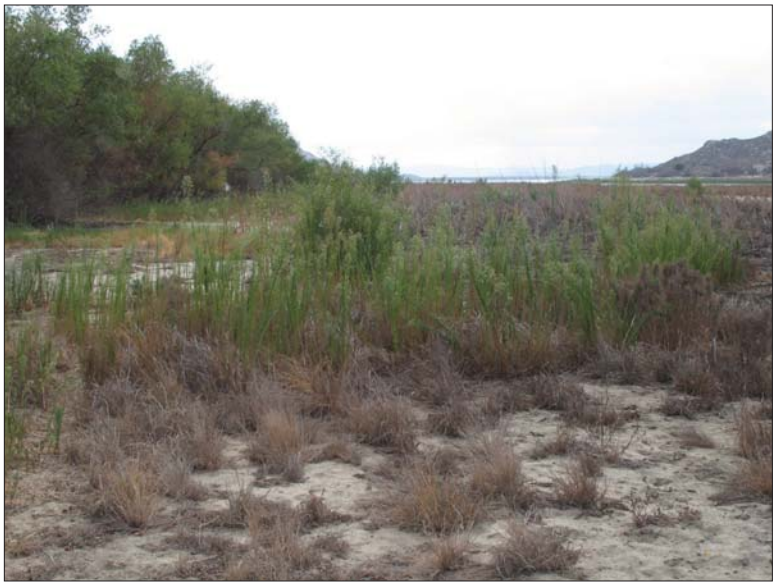
SOURCE: GlobeXplorer, 2007; DWR, 2007; ESA, 2009.

DWR - Perris Dam Remediation Program . 206008.02

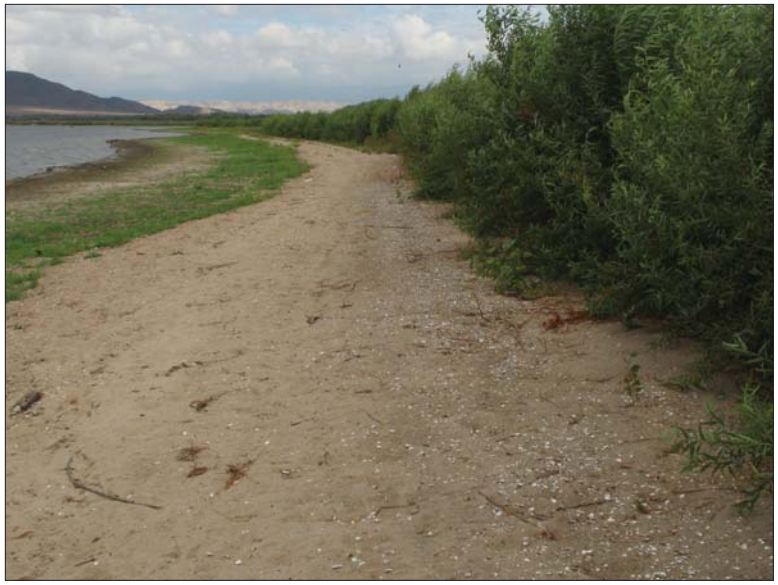
Figure 3.3-2
Habitat Types



1. View of damaged mature riparian habitat located on eastern portion of lake



2. View from east side of lake of former freshwater marsh and shallow water habitat, adjacent to band of emergent southern willow scrub



3. View northeast along lake edge of exposed shore and emergent willow scrub

4. View north of heliotrope scrub and sandbar with mule fat

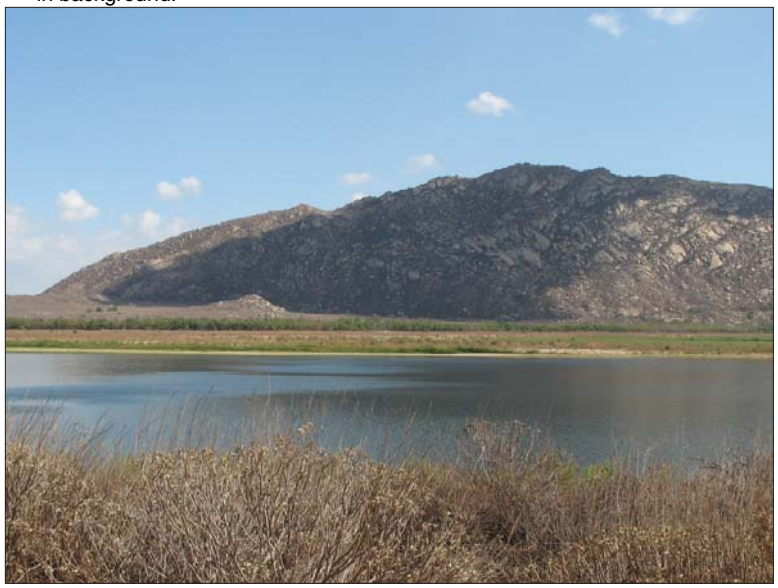
SOURCE: ESA, 2007.

DWR - Perris Dam Remediation Program . 206008.02

Figure 3.3-3
Biological Photos

5. View north, facing lake, of heliotrope scrub, mulefat scrub, and willow scrub in background.

6. View east showing habitat gradients.

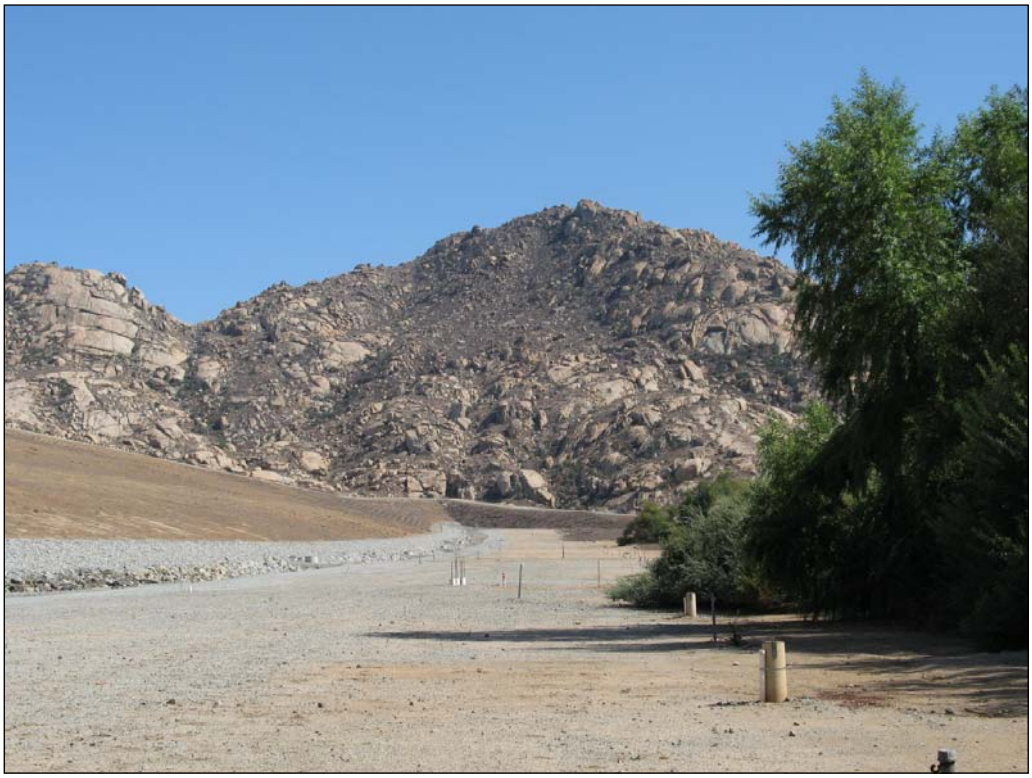


7. View south of Riversidean sage scrub with lake and exposed lake shore in background.

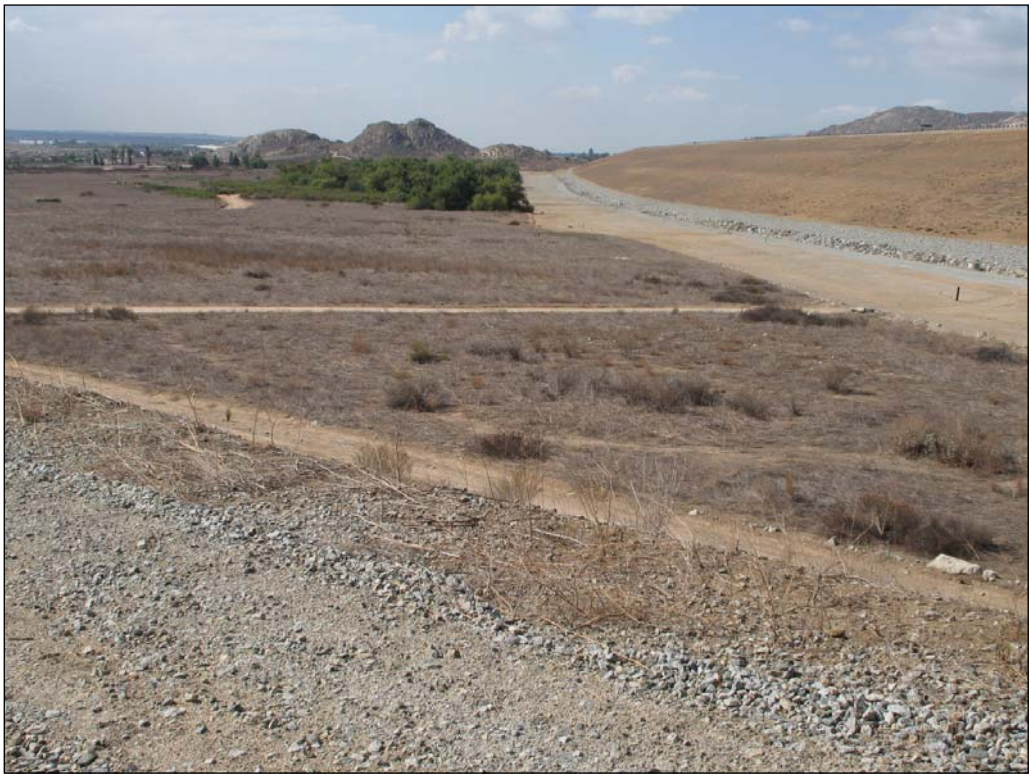
8. View from south west corner of lake of Riversidean sage scrub.

SOURCE: ESA, 2007.

Figure 3.3-4
Biological Photos



9. View of Perris Dam and mature southern willow scrub



10. View of Perris Dam, non-native grassland and mature southern willow scrub

SOURCE: ESA, 2007.

DWR - Perris Dam Remediation Program . 206008.02

Figure 3.3-5
Biological Photos

TABLE 3.3-1
HABITAT TYPES AT LAKE PERRIS PRE-DRAWDOWN AND EMERGING AFTER 2005 WATER LEVEL DRAWDOWN

Community Type	Existed in Pre-drawdown Conditions	Emerging Communities due to Drawdown
Riversidean Sage Scrub • Disturbed Riversidean Sage Scrub • Burned Riversidean Sage Scrub • Riversidean Sage Scrub-Buckwheat dominated • Riversidean Sage Scrub-Brittle bush dominated • Riversidean Sage Scrub/Urban • Disturbed Riversidean Sage Scrub/Urban	X	
Southern willow woodland and scrub • Southern Willow Scrub/Mule Fat Scrub	X	X
Mule Fat Scrub • Mule Fat Scrub/Rip-Rap • Mule Fat Scrub/Freshwater Marsh		X
Freshwater Marsh • Disturbed Freshwater Marsh	X	X
Coyote Brush Scrub	X	
Heliotrope Scrub/Sandbar • Heliotrope Scrub/Tamarisk Scrub/Sandbar		X
Non-native grassland • Burned non-native Grassland	X	
Eucalyptus Woodland • Eucalyptus Woodland/Disturbed Riversidean Sage Scrub	X	
Ruderal	X	X
Agriculture	X	
mix of southern willow woodland and scrub, mule fat scrub and heliotrope scrub/sandbar	X	X
Non-vegetated Features		
Open water/Lake Perris	X	
Sand	X	X
Rip-Rap	X	X
Urban Areas	X	

SOURCE: PSOMAS, 2008

Characteristics of each plant community and non-vegetated feature are described below and are defined using classification systems developed by Holland (1986), Sawyer and Keeler-Wolff (1995), and described in the Western Riverside County MSHCP (2003). Sensitive habitats are those that are considered to support unique vegetation communities, sensitive plant and/or wildlife species, or function as corridors for wildlife movement. Four plant communities observed within the biological survey area—Riversidean sage scrub, southern willow woodland and scrub, mule fat scrub, and heliotrope scrub, and associated habitats—are sensitive plant communities and are described below.

TABLE 3.3-2
PLANT SPECIES OBSERVED DURING FIELD SURVEYS

Scientific Name	Common Name
CONIFERAE	
Cupressaceae	Cypress Family
Cupresus sp.	cypress
Pinaceae	Pine Family
Pinus radiata	Monterey pine
ANGIOSPERMAE	**(DICOTYLEDONS)**
Amaranthus	Pigweed, Amaranth Family
*Amaranthus albus**	tumbleweed
Anacardiaceae	Sumac or Cashew Family
Rhus trilobata	skunkbrush (squawbush)
*Schinus molle**	Peruvian pepper tree
Toxicodendron diversilobum	poison oak
Apiaceae	Carrot Family
*Conium maculatum**	poison hemlock
*Foeniculum vulgare**	fennel
Asteraceae	Sunflower Family
Acourtia microcecphala	perezia (sacapellote)
Ambrosia acanthicarpa	annual bur ragweed (annual bur-sage)
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Artemisia dracunculus	wild tarragon (tarragon)
Artemisia tridentata	Great Basin sagebrush (big sagebrush)
Baccharis emoryi	Emory's baccharis
Baccharis pilularis	coyote bush
Baccharis salicifolia	mule fat
Bebbia juncea	sweetbush
Brickellia californica	California brickellbush
Brickellia desertorum	desert brickellbush
*Centaurea melitensis**	tocalote
*Chamomilla suaveolens**	pineapple weed (rayless chamomile)
Cirsium occidentale	cobweb thistle
Conyza canadensis	horseweed (mare's tail)
Conyza coulteri	Coulter's horseweed
*Cotula coronopifolia**	Brass-buttons
Encelia farinosa	brittlebush (incienso)
Ericameria palmeri	grassland goldenbush
Erigeron foliosus var. foliosus	fleabane aster
Eriophyllum confertiflorum	golden-yarrow

TABLE 3.3-2 (continued)
PLANT SPECIES OBSERVED DURING FIELD SURVEYS

Scientific Name	Common Name
Asteraceae (cont.)	
Filago californica	California filago (fluff weed)
*Filago gallica**	narrow-leaved filago
Gnaphaliem bicolor	two-toned everlasting (bicolored cudweed)
Gnaphalium californicum	California everlasting
Gnaphalium canescens ssp. microcephalum	felt-leaf everlasting (white everlasting)
*Gnaphalium luteo-album**	weedy cudweed
Gutierrezia californica	California matchweed (snakeweed)
Helianthus annus	common sunflower
Heterotheca grandiflora	telegraph weed
Isocoma menziesii	Menxie's goldenbush (white flowered goldenbush)
*Lactuca serriola**	prickly lettuce (wild lettuce)
Pluchea sericea	arrow weed
*Senecio vulgaris**	common groundsel
*Sonchus oleraceus**	common sow thistle
Stephanomeria virgata	virgate wreath plant (twiggy wreath plant)
Berberidaceae	Barberry Family
Berberis fremontii	Fremont's barberry
Boraginaceae	Borage Family
Amsinckia menziesii var. intermedia	common fiddleneck
Cryptantha microstachys	Tejon cryptantha
Heliotropium curassavicum	alkali heliotrope (wild heliotrope)
Brassicaceae	Mustard Family
*Brassica geniculata (=Herschfeldia incana)**	short-podded mustard (Mediterranean mustard)
*Brassica nigra**	black mustard
Capsella bursa-pastoris	shepherd's purse
*Sisymbrium orientale**	Oriental mustard (Oriental sisymbrium)
Thysanocarpus laciniatus	lacepod (fringepod)
Cactaceae	Cactus Family
Opuntia littoralis	coastal prickly pear
Opuntia prolifera	coast cholla
Capparaceae	Caper Family
Isomeris arborea (=Cleome isomeris)	bladderpod
Caprifoliaceae	Honeysuckle Family
*Lonicera japonica**	Japanese honeysuckle
Adoxaceae	Elderberry Family
Sambucus mexicana	blue elderberry (Mexican elderberry)

TABLE 3.3-2 (continued)
PLANT SPECIES OBSERVED DURING FIELD SURVEYS

Scientific Name	Common Name
Chenopodiaceae	Goosefoot Family
Atriplex canescens	fourwing saltbush
*Chenopodium album**	white goosefoot (lamb's quarters)
*Salsola tragus**	Russian thistle (tumbleweed)
Suaeda nigra (=S. moquinii, S. torreyana)	bush seepweed (iodine weed)
Convolvulaceae	Morning-Glory Family
*Convolvulus arvensis**	bindweek
Crassulaceae	Stonecrop Familly
Dudleya lanceolata	lance-leaved dudleya (lance-leaved live-forever)
Cucurbitaceae	Gourd Family
Cucurbita foetidissima	stinking gourd (wild gourd, coyote melon)
Marah macrocarpus	wild cucumber (manroot)
Cuscataceae	Dodder Family
Cuscuta californica	dodder (California witch's hair)
Euphorbiaceae	Spurge Family
Croton californicus	California croton
Croton setigerus (=Eremocarpus setigerus)	turkey mullein (doveweed)
Euphorbia albomarginata (=Chamaesyce albomarginata)	rattlesmake spurge (rattlesnake weed)
*Ricinus communis**	castor bean
Fabaceae	Legume Family
*Acacia longifolia**	Sydney golden wattle
Lotus agrophyllus	silverleaf lotus (silver lotus)
Lotus salsuginosus	coastal lotus (alkali lotus)
Lotus scoparius	deerweed (California broom)
Lupinus sp.	lupine
*Medicago polymorpha**	California bur clover (bur-clover)
*Melilotus alba**	white sweet clover
*Melilotus officinalis**	yellow sweet clover
*Parkinsonia aculeata**	Mexican palo verde
Fagaceae	Oak Family
Quercus agrifolia	coast live oak
Garryaceae	Silk Tassel Family
Garrya flavescens	pale silk tassel
Geraniaceae	Geranium Family
*Erodium cicutarium**	red-stemmed filaree

TABLE 3.3-2 (continued)
PLANT SPECIES OBSERVED DURING FIELD SURVEYS

Scientific Name	Common Name
Grossulariaceae	Gooseberry Family
Ribes aureum	golden currant
Ribes indecorum	white-flowered currant (white chaparral currant)
Hydrophyllaceae	Waterleaf Family
Eucrypta chrysanthemifolia	common eucrypta
Phacelia cicutaria	caterpillar phacelia
Phacelia distans	common phacelia
Juglandaceae	Walnut and Pecan Family
Juglans californica	California black walnut
Lamiaceae	Mint Family
*Marrubium vulgare**	horehound
Salvia columbariae	chia
Salvia leucophylla	purple sage
Salvia mellifera	black sage
Lauraceae	Laurel Family
*Cinnamomum camphorum**	camphor tree
Malvaceae	Mallow Family
Malacothamnus fasciculatus	bush mallow (chaparral bush mallow)
Myoporaceae	Myoporum Family
*Myoporum laetum**	myoporum
Myrtaceae	Myrtle Family
*Eucalyptus globulus**	blue gum eucalyptus
Eucalyptus sp.	eucalyptus
Nyctaginaceae	Four O'Clock Family
Mirabilis laevis (=Mirabilis californica)	wishbone bush
Oleaceae	Olive Family
Fraxinus velutina	Arizona ash (velvet ash)
*Olea europaea**	common olive
Onagraceae	Evening Primrose Family
Epilobium ciliantum ssp. ciliantum	willow herb
Papaveraceae	Poppy Family
Eschscholzia californica	California poppy
Platanaceae	Plane Tree, Sycamore Family
Platanus hybrida	London planetree
Platanus racemosa	California sycamore (western sycamore)

TABLE 3.3-2 (continued)
PLANT SPECIES OBSERVED DURING FIELD SURVEYS

Scientific Name	Common Name
Polygonaceae	Buckwheat Family
Eriogonum fasciculatum	California buckwheat
Eriogonum fasciculatum var. polifolium	California buckwheat
Eriogonum sp.	buckwheat
Polygonum lapathifolium	willow weed
*Rumex acetosella**	sheep sorrel
*Rumex crispus**	curly dock
Portulacaceae	Purslane Family
Caluptridium monandrum	common pussypaws
Ranunculaceae	Buttercup Family
Ceanothus crassifolius	pipestems (virgin's bower)
Rhamnaceae	Buckthorn Family
Ceanothus crassifolius	hoary-leaf ceanothus (thick-leaved ceanothus)
Rhamnus ilicifolia	holly-leaf redberry
Rosaceae	Rose Family
Heteromeles arbutifolia	toyon (Christmas-berry, California holly)
Prunus ilicifolia	hollyleaf cherry
Rubiaceae	Madder Family
Galium angustifolium	narrow-leaved bedstraw
Galium nuttallii	climbing bedstraw
Saliceae	Willow Family
Populus fremontii	Fremont cottonwood
Salix exigua	narrow-leaved willow (sandbar willow)
Salix gooddingii	black willow (Goodding's black willow)
Salix laevigata	red willow
Scrophulariaceae	Figwort Family
Antirrhinum coulterianum	white snapdragon
Keckiella antirrhinoides	yellow bush penstemon (yellow keckiella)
Keckiella cordifolia	heart-leaved penstemon
Mimulus aurantiacus	bush monkey flower
Penstemon centranthifolius	scarlet bugler
Penstemon sp.	penstemon
Scrophularia californica	California figwort (bee plant)
Veronica anagalis-aquatica	great water speedwell

TABLE 3.3-2 (continued)
PLANT SPECIES OBSERVED DURING FIELD SURVEYS

Scientific Name	Common Name
Solanaceae	Nightshade Family
Datura wrightii	sacred datura (false jimson weed)
*Nicotiana glauca**	tree tobacco
*Solanum nigrum**	black nightshade
Sterculiaceae	Cacao Family
Fremontodendron californicum	flannelbush
Tamaricaceae	Tamarisk Family
*Tamarix ramosissima**	Mediterranean tamarisk
Urticaceae	Nettle Family
Urtica dioica ssp. holosericea	hoary nettle
ANGIOSPERMAE	**(MONOCOTYLEDONS)**
Agavaceae	Agave Family
Yucca whipplei	our lord's candle (chaparral yucca, Spanish bayonet)
Arecaceae	Palm Family
*Phoenix canariensis**	Canary Island date palm
*Washingtonia robusta**	California fan palm
Cyperaceae	Sedge Family
Carex sp.	sedge
Cyperus involucratus	umbrella sedge
Scirpus sp.	bulrush
Juncaceae	Rush Family
Juncus acutus	spiny rush
Juncus sp.	rush
Liliaceae	Lily Family
Bloomeria crocea	golden stars
Poaceae	Grass Family
*Agrostis stolonifera**	creeping bentgrass
*Avena barbata**	slender oat
*Avena fatua**	wild oat
*Bromus diandrus**	ripgut grass
*Bromus hordeaceus**	soft chess (soft brome)
*Bromus madritensis ssp. rubens**	red brome (foxtail chess)
*Bromus tectorum**	cheat grass (downy brome)
*Cynodon dactylon**	Bermuda grass
Distichlis spicata	salt grass
*Hordeum murinum**	foxtail barley
*Lamarkia aurea**	goldentop

TABLE 3.3-2 (continued)
PLANT SPECIES OBSERVED DURING FIELD SURVEYS

Scientific Name	Common Name
Poa secunda	perennial bluegrass (pine bluegrass)
*Polypogon monspeliensis**	rabbitfoot grass (annual beard grass)
*Schismus barbatus**	a'bu ma shi' (father of the earth)
Vulpia myuros (=Festuca myuros)*	rattail fescue
Typhaceae	Cattail Family
Typha angustifolia	narrow-leaved cattail

* Exotic plant species

SOURCE: Psomas, 2008

Pre-drawdown Plant Communities

The following plant communities occur within the study area and were present prior to the drawdown of the lake in 2005. The plant community acreages identified below are derived from field surveys recorded in Appendix C as shown in Figure 3.3-2.

Riversidean Sage Scrub

The Western Riverside County MSHCP (2003) describes Riversidean sage scrub as being dominated by a characteristic suite of low-statured, aromatic, drought deciduous shrub and subshrub plant species. Composition varies substantially depending on physical circumstances and the successional status of the habitat. Typical stands are fairly open and are generally dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and red brome (*Bromus madritensis* ssp. *rubens*), each attaining at least 20 percent cover (Holland, 1986). Other common species typically found in Riversidean sage scrub include lemonadeberry (*Rhus integrifolia*), sugarbush (*Rhus ovata*), yellow bush penstemon (*Keckiella antirrhinoides*), Mexican elderberry (*Sambucus mexicana*), sweetbush (*Bebbia juncea*), boxthorn (*Lycium* spp.), tall prickly-pear (*Opuntia oricola*), and species of *Dudleya* (Riverside MSHCP, 2003). Riversidean sage scrub typically exists on steep slopes, severely drained soils, or clay soils that release stored soil moisture only slowly.

Within the biological survey area, Riversidean sage scrub was observed and mapped in numerous areas around Lake Perris. The characteristic plant species of the Riversidean sage scrub habitat found on the biological survey area include: California sagebrush, California buckwheat, annual bur ragweed (*Ambrosia acanthicarpa*), common California aster (*Corethrogyne filaginifolia* [*=Lessingia filaginifolia*]), ripgut brome (*Bromus diandrus*), red brome, and sticky monkeyflower (*Mimulus aurantiacus)*, among others. Approximately 594 acres of Riversidean sage scrub was mapped within the biological resources study area.

Several different sub-communities of Riversidean sage scrub are found at the study site with varying species compositions due to mechanical disturbance, fire regime, urban interface, and

climatic variation. Disturbed Riversidean sage scrub refers to areas that have been invaded by non-native species, or mechanically disturbed. Non-native shrubs, herbs and grasses such as bromes, prickly sow thistle (*Sonchus asper*), tree tobacco (*Nicotiana glauca*), and Russian thistle (*Salsola tragus*), among others were observed within this community, which was observed and mapped in small areas around Lake Perris. Burned Riversidean sage scrub, like disturbed Riversidean sage scrub, also contains large areas of bare ground, as well as California sagebrush, California buckwheat, and common California aster. However, non-native herbs and grasses such as bromes and tocalote (*Centaurea melitensis*) dominate this community. Approximately one acre of recently burned Riversidean sage scrub are found within the biological survey area. Riversidean sage scrub-California buckwheat dominated and Riversidean sage scrub-Brittlebush (*Encelia farinosa*) dominated habitats are similar in composition to Riversidean sage scrub, but exhibit a dominance of the species specified in their titles. Approximately 14 acres of Riversidean sage scrub-California buckwheat dominated habitat and seven acres of Riversidean sage scrub-Brittlebush dominated habitat were found within the biological survey area. The last two sub-communities feature the interface of Riversidean sage scrub with urban lands. Riversidean sage scrub/Urban is similar in composition to Riversidean sage scrub; however, it is within and/or surrounded by urban development, and lake and recreation facilities. This community is dominated by native plant species including California sagebrush, brittlebush, California buckwheat, and common California aster, with, non-native herbs and grasses such as bromes, tocalote, and other landscaped species. Approximately 19 acres of Riversidean sage scrub/Urban habitat are found within the biological survey area. Disturbed Riversidean sage scrub/Urban habitat observed and mapped within the proposed project area is similar in composition to Riversidean sage scrub/Urban habitat; however, it is more open with larger areas of bare ground, and has been invaded by non-native species and/or mechanically disturbed. Approximately 15 acres of disturbed Riversidean sage scrub/Urban habitat are found within the biological survey area.

Southern Willow Woodland and Scrub

Holland (1986) describes southern willow woodland and scrub as dense, broadleafed, winter-deciduous riparian thickets dominated by several willow species (*Salix* spp.) with scattered Fremont's cottonwood (*Populus fremontii*) and California sycamore (*Platanus racemosa*). According to the Western Riverside County MSHCP, southern willow woodland and scrub may also contain gooseberry (*Ribes* spp.) and elderberry. Most stands are too dense to allow much understory development.

Southern willow woodland and scrub is found in large areas around Lake Perris as a result of the lake edge and seepage below the dam. Approximately 78 acres of southern willow woodland and scrub were observed and mapped within the biological survey area. The characteristic plant species of the southern willow woodland and scrub habitat found within the study area include, Goodding's black willow (*Salix gooddingii*), red willow (*Salix laevigata*), narrow leaved willow (*Salix exigua*), mule fat (*Baccharis salicifolia*), tarragon (*Artemisia dracunculus*), curley dock (*Rumex crispus*), Fremont's cottonwood, and umbrella sedge (*Cyperus involucratus*). Where present in the southern willow woodland and scrub habitat, understory species included annual bur ragweed, southwestern spinyrush (*Juncus acutus*), and bromes (*Bromus diandrus, B.*

madritensis ssp. *rubens*). Areas of southern willow woodland and scrub grade into mule fat scrub and are designated as southern willow scrub/mule fat scrub.

Southern willow woodland and scrub is represented as a wetland plant community and likely falls under the jurisdiction of the Corps as an adjacent wetland to Lake Perris, pursuant to Section 404 of the Clean Water Act. The CDFG considers riparian habitats along rivers streams and lakes under their jurisdiction pursuant to Section 1602 of the California Fish and Game Code.

Freshwater Marsh

Holland describes freshwater marsh habitat as emergent wetlands dominated by perennial, emergent monocots four to five meters tall often forming a completely closed canopy. Freshwater marshes are found in quiet waters (lacking significant current), in permanently flooded areas with deep, peaty soils. The freshwater marsh community within the proposed project area occupies approximately 68 acres along the shore of Lake Perris. Narrow-leaved cattail (*Typha angustifolia*) is the dominant species found within this plant community along with bulrush (*Scirpus* sp.), southwestern spiny rush, willow (*Salix* sp.), willow herb (*Epilobium* sp.), and poison hemlock (*Conium maculatum*), among others. Approximately half of the freshwater marsh found on-site is considered disturbed freshwater marsh because it contains non-native shrubs, herbs and grasses including bromes, prickly sow thistle, tamarisk (*Tamarix ramosissima*), tree tobacco, and Russian thistle. Freshwater marsh and disturbed freshwater marsh composed of wetland plant associations likely fall within the jurisdiction of the Corps as adjacent wetlands to Lake Perris.

Coyote Brush Scrub

Coyote brush (*Baccharis pilularis*) is the sole or dominant shrub in the canopy of coyote brush scrub. The canopy tends to be continuous-to-intermittent with sparse ground cover. Although Holland (1986) does not recognize this coyote brush scrub habitat, this habitat type is persistent in California where coyote brush dominates the landscape. This plant association is a part of the coastal scrub series with plant species common to those observed and mapped within the Riversidean sage scrub habitat. Within the proposed project area, 13 acres of coyote brush scrub is found in the western and southwestern areas around Lake Perris. This habitat type is characterized in the proposed project area by coyote brush, mule fat, tarragon, sticky monkey flower, annual bur ragweed, and bromes.

Non-Native Grassland

Holland (1986) describes non-native grassland as a dense to sparse cover of annual grasses associated with numerous species of showy-flowered, native annual forbs (“wildflowers”), especially in years of abundant rainfall. Germination and growth of the annual grass and forbs species occurs with the onset of the late fall rains, with flowering and seed-set occurring from winter through spring. With a few exceptions, the plants are dead through the summer through the fall dry season, persisting as seeds. Soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), and foxtail barley (*Hordeum murinum*) are the dominant grasses in this association with scattered mustard, sweet fennel (*Foeniculum vulgare*), California sagebrush, and California buckwheat among others that may be present.

There are approximately 347 acres of non-native grassland within the biological survey area. The characteristic plant species of the non-native grassland habitat found within the biological survey area include: bromes, tocalote, sweet fennel, wild oat, foxtail barley, and black mustard (*Brassica nigra*) among others. A small percentage (17 acres) of the non-native grassland has been burned to create habitat for the federally listed-endangered Stephens' kangaroo rat, known to occur within the area. This sub-community type is know as Burned non-native grassland and contains large areas of bare ground.

Eucalyptus Woodland

Eucalyptus trees (*Eucalyptus* spp.) are the sole or dominant trees in the canopy in this habitat type, with few other species present (Sawyer and Keeler-Wolf, 1995). Trees tend to have a continuous canopy and shrubs are infrequent with a sparse ground cover if any that is mostly covered in a thick layer of eucalyptus bark and leaf litter. Approximately one acre of eucalyptus woodland is found within the biological survey area. Eucalyptus trees dominate this habitat found within the proposed project area. In addition to eucalyptus trees, annual bur-sage, wild oats, and brome grasses were observed. An additional 27 acres of combined eucalyptus woodland/ disturbed Riversidean sage scrub occurs in the project area with a sparse eucalyptus cover with a higher density of California sagebrush, California buckwheat, common California aster, ripgut brome, and red brome.

Agriculture

Agriculture includes field areas laying either fallow or being actively used for agriculture practices. Approximately nine acres of agriculture were observed and mapped within the biological survey area north of Ramona Expressway west of Perris Lake Drive.

Open Water/Lake Perris

Open water/Lake Perris habitat includes the approximately 1862-acre man-made lake behind Perris Dam that has no defined surface water connection to downstream natural water courses. The lake is used primarily as a water supply reservoir, and also provides for recreational boating, hunting, fishing, and swimming purposes at varying usage levels throughout the year depending on the season. In accordance with the latest Rapanos Guidance memorandum, the Corps will continue to assert jurisdiction over traditional navigable waters (TNWs) and all wetlands adjacent to TNWs. While the Corps has not completed a formal traditional navigable waters (TNW) determination for Lake Perris, the Corps has confirmed it has been regulating dredge and fill activities at Lake Perris pursuant to Section 404 of the Clean Water Act and an applicant can concede jurisdiction under the preliminary jurisdictional determination option in the latest Rapanos Guidance memorandum. The Corps typically asserts regulatory jurisdiction over a water body that is not a TNW if that water body is "relatively permanent" (i.e., contains water year-round, or at least "seasonally," and also asserts jurisdiction over wetlands adjacent to such water bodies if the wetlands "directly abut" the water body (i.e., if the wetlands are not separated from the water body by an upland feature such as a berm, dike, or road).

The assumption of Corps regulatory for this project is based on the presence of a relatively permanent water, the recreational boating use of the lake (e.g. navigability), and the presumption of commercial purpose relating to navigation. The lake would also likely meet the interstate commerce nexus commonly applied to delineate isolated waters. The limits of Corps jurisdiction on Lake Perris are presumed to be the 1588 foot water surface level of the pre-drawdown lake level representing the Ordinary High Water Mark (OHWM). The lateral extent of Corps jurisdiction extends to the furthest limits of wetland habitat adjacent to the open water and that meets the three-parameter definition of a jurisdictional wetland. This again, is presumed to be the furthest extent of the willow riparian habitat along the northeastern portion of the lake, as well as willow riparian habitat occurring below the dam.

Unvegetated Sand and Rip Rap

Unvegetated sand describes the shoreline and beach areas around Lake Perris. Approximately 88 acres of mostly unvegetated sand were observed and mapped within the biological survey area. The sand areas tended to either be absent of any vegetation or very sparsely vegetated with both native and non-native plant species. Plant species identified within theses areas included small mule fat and willow saplings, heliotrope, scattered tamarisk, and brome grasses. Rip-rap describes the areas along the banks and shore of Lake Perris where un-grouted rip-rap has been placed for bank stabilization. Rip-rap is also found within one of the mule fat scrub plant communities mentioned above. Approximately 19 acres of rip-rap are found within the proposed project area. Sparse vegetation, between the rip-rap and boulders and along the lake edge includes mule fat and willow saplings, rushes, bromes, and heliotrope, among others.

Urban Areas

Urban areas describe land occupied by structures, paving and other impermeable surfaces, and/or areas where landscaping has been installed and is maintained. Within the proposed project area, urban areas are active recreation areas for camping facilities, boat docks and launch ramps, parking lots, and surrounding residences. Approximately 498 acres of urban areas were mapped within the study area.

Drawdown Plant Communities

The following is a description of plant communities that have colonized the exposed lakebed following the 2005 emergency drawdown. These terrestrial plant communities composed of pioneer species did not exist before the 2005 emergency drawdown as the land was submerged below the normal operational level of the 1588-foot elevation lake. They are described below in order to provide the reader with an understanding of current conditions and for the analysis of effects resulting from the drawdown and planned refilling.

Mule fat Scrub

Holland (1986) and Sawyer and Keeler-Wolf (2006) describe mule fat scrub as a, tall, herbaceous riparian scrub habitat dominated by mule fat with arroyo willow and/or narrowleaf willow, sedges (*Carex* spp.) and stinging nettle (*Urtica dioica*) occurring as associates in variable densities. Mule fat scrub is widely scattered along intermittent streams and in the upper floodplain areas of larger rivers in southern California.

There are approximately 47 acres of mule fat scrub within the proposed project area characterized by mule fat, Goodding's black willow, red willow, rushes (*Juncus* spp.), narrow-leaved cattail, tarragon, sticky monkey flower, and seep-spring monkey flower (*Mimulus guttatus*). Other species present in the community include annual bur ragweed, stinging nettle, and brome grasses. After the emergency drawdown, some areas of mule fat scrub now intermix with rip-rap around the shore areas of Lake Perris and are designated as mule fat scrub/rip rap. Seven acres of mule fat scrub have become interspersed with freshwater marsh (described above) and are designated mule fat scrub/freshwater marsh.

Heliotrope Scrub/Sandbar

Sawyer and Keeler-Wolf (1995) and Holland (1986) do not describe the Heliotrope Scrub/Sandbar habitat in their classification systems. However, this habitat type is generally persistent in California where alkali heliotrope (*Heliotropium curassavicum*) colonizes recently exposed/disturbed areas such as sandbar and lake shore areas. Approximately eight acres of heliotrope scrub/sandbar are mapped within the biological survey area characterized by alkali heliotrope, mule fat, mugwort (*Artemisia douglasiana*), and brome grasses. The recently colonized lake bottom also supports a heliotrope scrub/tamarisk scrub/sandbar subcommunity that has a higher dominance of tamarisk along with mule fat, mugwort, and brome grasses. Approximately 134 acres of heliotrope scrub/tamarisk scrub/sandbar are found within the study area.

Ruderal

Ruderal refers to those areas where vegetation has been affected by human activities resulting in a dominance of mostly weedy annual plant species such as brome grasses, mustards (*Brassica* and *Sisymbrium* spp.), filaree (*Erodium* spp.), and tocalote. Approximately 10 acres of ruderal vegetation were observed and mapped within the biological survey area.

3.3.4 Wildlife

The plant communities described above form the basis of the wildlife habitats within the study area that provide food and water sources upon which wildlife depend, along with nesting and denning sites, escape and movement cover, and protection from adverse weather. Some species are habitat specific for all their life history requirements, while many wildlife species that occur in the area move freely between plant communities to obtain all their life history needs. A list of avian wildlife species observed during 2007 biological resources surveys is provided as **Table 3.3-3**. **Table 3.3-4** lists all wildlife species observed at Lake Perris by Psomas biological resources surveys and observations obtained from the Department of Parks and Recreation.

The habitats within the project site support a diverse array of terrestrial and aquatic wildlife species. Waterfowl and waterbirds such as the western grebe (*Aechmorphorus clarkii*), great blue heron (*Ardea herodias*), and mallard (*Anas platyrhnchos*) roost and feed on Lake Perris and in the freshwater marsh and shoreline habitats found along the lake edge. Ospreys (*Pandion haliaetus)* and terns (*Sterna* spp.) can be observed over the lake foraging. Open water and shoreline habitats are also utilized by violet-green (*Tachycineta thalassina*), cliff (*Petrochelidon pyrrhonota*) and barn swallows (*Hirundo rustica*), as well as various species of bats which feed on insects found above the water surface.

TABLE 3.3-3
AVIAN SPECIES OBSERVED DURING 2007 FIELD SURVEYS AT LAKE PERRIS

Scientific name	Common name	Area				
		Irrigated Riparian	Riparian Below Dam	Bernasconi Hills	Open Water and Shoreline	RSS[a], NNG[b]
Ardea herodias	great blue heron	X			X	
Cathartes aura	turkey vulture	X		X		X
Pandion haliaetus	osprey	X			X	
Accipiter cooperii	cooper's hawk	X	X			
Buteo jamaicensis	red tailed hawk	X	X	X		X
Falco sparverius	American kestrel	X	X	X	X	X
Hydroprogne caspia	Caspian tern					
Callipepla californica	California quail	X		X		X
Zenaida macroura	mourning dove	X	X	X	X	X
Geococcyx californianus	greater roadrunner			X		X
Aeronautes saxatalis	white-throated swift			X	X	
Calypte anna	Anna's hummingbird	X	X	X		X
Picoides nuttallii	Nuttall's woodpecker	X	X			
Empidonax traillii extimus	southwestern willow flycatcher					
Sayornis nigricans	black phoebe	X				
Myiarchus cinerascens	ash-throated flycatcher	X	X			
Tyrannus verticalis	western kingbird	X				X
Vireo bellii pusillus	least Bell's vireo	X	X			
Corvus corax	raven	X	X	X	X	X
Tachycineta thalassina	violet-green swallow	X			X	X
Petrochelidon pyrrhonota	cliff swallow	X			X	X
Hirundo rustica	barn swallow	X	X		X	X
Psaltriparus minimus	bushtit	X	X			
Troglodytes aedon	house wren	X				
Salpinctes obsoletus	rock wren			X		
Pipilo crissalis	California towhee	X	X	X		X
Pipilo maculatus	spotted towhee	X	X			X
Melospiza melodia	song sparrow	X	X			X
Saltator atriceps	black-headed grosbeak	X	X			
Passerina caerulea	blue grosbeak	X	X			
Molothrus ater	brown-headed cowbird	X				X
Icterus bullockii	Bullock's oriole	X	X			
Carpodacus mexicanus	house finch	X	X			X
Carduelis psaltria	lesser goldfinch	X	X			X

[a] RSS – Riversidean sage scrub
[b] NNG – Non-native grassland

SOURCE: Psomas, 2008; ESA, 2007

TABLE 3.3-4
SPECIES OBSERVED AT LAKE PERRIS SRA

Scientific name	Common name
Amphibians	
Bufo boreas	western toad
Reptiles	
Aspidoscelis tigris stejnegeri	coastal whiptail (cocastal western whiptail)
Crotalus rubber rubber	red-diamond rattlesnake
Crotalus oreganus (=Crotalus viridis)	western rattlesnake
Lampropeltis getula	common kingsnake
Masticophis lateralis	California whipsnake (striped racer)
Pituophis catenifer	gopher snake
Sceloporus magister	desert spiny lizard
Sceloporus occidentalis	western fence lizard
Sceloporus orcutti	granite spiny lizard
Trachemys scripta	pond slider (exotic)
Uta stansburiana	common side-blotched lizard
Birds	
Accipiter cooperii	Cooper's hawk
Aechmophorus occidentalis	western grebe
Aeronautes saxatalis	white-throated swift
Agelaius phoeniceus	red-winged blackbird
Anas americana	American wigeon
Anas clypeata	northern shoveler
Anas platyrhunchos	mallard
Anas sp.	teal
Ardea herodias	great blue heron
Ardea alba	great egret
Athene cunicularia	burrowing owl
Aythya collaris	ring-necked duck
Bubo virginianus	great horned owl
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Callipepla californica	California quail
Calypte anna	Anna's hummingbird
Carduelis psaltria	lesser goldfinch
Carpodacus mexicanus	house finch
Cathartes aura	turkey vulture
Catherpes mexicanus	canyon wren
Chamaea fasciata	wrentit
Charadrius vociferous	killdeer

TABLE 3.3-4 (continued)
SPECIES OBSERVED AT LAKE PERRIS SRA

Scientific name	Common name
Birds (cont.)	
Circus cyaneus	northern harrier
Colaptes auratus	northern flicker
Columba livia	rock pigeon
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Dendroica coronata	yellow-rumped warbler
Egretta thula	snowy egret
Elanus leucurus	white-tailed kite
Empidonax traillii extimus	southwestern willow flycatcher
Falco peregrinus anatum	American peregrine falcon
Falco sparverius	American kestrel
Fulica americana	American coot
Geococcyx californianus	greater roadrunner
Geothlypis trichas	common yellowthroat
Himantopus mexicanus	black-necked stilt
Hirundo rusticca	barn swallow
Hydroprogne caspia	Caspian tern
Icterus bullockii	Bullock's oriole
Junco hyemalis	dark-eyed junco
Lanius ludovicianus	loggerhead shrike
Larus delawarensis	ring-billed gull
Larus occidentalis	western gull
Limnodromus sp.	Dowitcher
Megaceryle alcyon	belted kingfisher
Melospiza melodia	song sparrow
Mimus polyglottos	mockingbird
Molothrus ater	brown-headed cowbird
Myiarchus cinerascens	ash-throated flycatcher
Nycticorax nycticorax	black-crowned night heron
Oxyura jamaicensis	ruddy duck
Pandion haliaetus	osprey
Passer domesticus	house sparrow
Passerina caerulea	blue grosbeak
Pelecanus erythrorhynchos	American white pelican
Petrochelidon pyrrhonota	cliff swallow
Phainopepla nitens	phainopepla
Pheucticus melanocephalus	black-headed grosbeak
Picoides nuttallii	Nuttall's woodpecker

TABLE 3.3-4 (continued)
SPECIES OBSERVED AT LAKE PERRIS SRA

Scientific name	Common name
Birds (cont.)	
Pipilo crissalis	California towhee
Pipilo maculates	spotted towhee
Plegadis chihi	white-faced ibis
Podilymbus podiceps	pied-billed grebe
Polioptila caerulea	blue-gray gnatcatcher
Psaltriparus minimus	bushtit
Recurvirostra americana	American avocet
Salpinctes obsoletus	rock wren
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Stelgidopteryx serripennis	northern rough-winged swallow
Sterna forsteri	Forster's tern
Sturnella neglecta	westerm meadowlark
Sturnus vulgaris	starling
Tachycineta thalassina	violet-green swallow
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
Tyrannus Verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Tyto alba	barn owl
Vireo bellii pusillus	least Bell's vireo
Xanthocephalus xanthocephalus	yellow-headed blackbird
Zenaida macroura	mourning dove
Zonotrichia leucophrys	white-crowned sparrow
Mammals	
Canis latrans	coyote
Chaetodipus fallax fallax	northwestern San Diego pocket mouse
Dipodomys simulans	San Diego kangaroo rat (Dulzura kangaroo rat)
Lepus californicus	black-tailed jackrabbit
Lepus californicus bennettii	San Diego black-tailed jackrabbit
Lynx rufus	bobcat
Mephitis mephitis	stripped skunk
Mustela frenata	long-tailed weasel
Myotis spp.	bats
Odocoileus hemionus	mule deer (black-tailed deer)
*Perognathus longimembris brevinasus***	Los Angeles pocket mouse
Peromyscus boylii	brush mouse
Peromyscus maniculatus	deer mouse (North American deermouse)

TABLE 3.3-4 (continued)
SPECIES OBSERVED AT LAKE PERRIS SRA

Scientific name	Common name
Mammals (cont.)	
Pipistrellus hesperus	western pipistrelle
Procyon lotor	raccoon
*Dipodomys stephensi***	Stephens' kangaroo rat
Puma concolor	mountain lion
Spermophilus sp.	ground squirrel sp.
Spermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Audubon's cottontail (desert cottontail)
Thomomys bottae	Botta's pocket gopher

SOURCE: Species occurrence information obtained from Ken Kietzer, District Environmental Scientist, Department of Parks and Recreation and Psomas field surveys.
** Species occurrence information obtained from Riverside County RCA and Psomas

Shoreline habitats also support habitat generalists such as the mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), common raven (*Corvus corax*), and California kingsnake (*Lampropeltis getula*). Mammals including raccoons (*Procyon lotor*), black-tailed deer (*Odocoileus hemionus*), striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), and bobcat (*Lynx rufus*) use the lake as a water and/or food source.

Riparian areas surrounding the lake edge and below the dam support a number of perching bird species including the ash-throated flycatcher (*Myiarchus cicerascens*), western kingbird (*Tyrannus verticalis*), least Bell's vireo, house wren (*Troglodytes aedon*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculates*), black-headed grosbeak (*Saltator atriceps*), blue grosbeak (*Passerina caerulea*), song sparrow (*Melospiza melodia*), Bullock's oriole (*Icterus bullockii*), house finch (*Carpodacus mexicanus*) and lesser goldfinch (*Carduelis psaltria*). These species are adapted to cover provided by the willow trees, and forage in branches and along the floor for insects, seeds, and other food sources. Nuttal's woodpecker (*Pipicoides nuttallii*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and Cooper's hawk (*Accipiter cooperii*) are also found using the riparian habitat. Cottontail rabbits (*Sylvilagus audubonii*), black-tailed jackrabbits (*Lepus californicus*), raccoons, and long-tailed weasels (*Mustela frenata*) also inhabit wooded areas provided by southern willow woodland and scrub.

The sage scrub and chaparral habitats in the Bernasconi Hills support wildlife species adapted to drier and more open habitats including the California quail (*Callipepla californica*), greater roadrunner (*Geococcyx californianus*), white-throated swift (*Aeronautes saxatalis*), rock wren (*Salpinctes obsoletus*) and California towhee. Reptile species observed in this habitat include western fence lizards (*Sceloporus occidentalis*), gopher snakes (*Pituophis catenifer*), red diamond rattlesnake (*Crotalus rubber*), southern pacific rattlesnake (*Crotalus viridis helleri*), side blotched lizard (*Uta stansburiana*), granite spiny lizard (*Sceloporus orcutti*) and coastal western whiptail

(*Cnemidophorus tigris*). Mammals found on-site include the San Diego black-tailed jackrabbit, bobcat, coyote and a number of rodents.

Grassland species observed on-site include the California quail, mourning dove, white-throated swift (*Aeronautes saxatalis*), Anna's hummingbird, western kingbird, towhees, brown-headed cowbird (*Molothrus ater*) and finches. The Lake Perris SRA employs a cowbird trapping program to reduce the adverse effects from this nest parasite. Red-tailed hawks, American kestrels (*Falco sparverius*) and loggerhead shrikes (*Lanius ludovicianus*) also utilize grassland habitats as foraging grounds. Grasslands also support a number of reptiles such as the western whiptail and western fence lizard. Mammals found in grassland habitats include coyotes and a number of ground dwelling mammals such as ground squirrels (*Spermophilus spp.*), pocket gophers (*Thomomys bottae*), and kangaroo rats.

In addition to the plant communities of the biological survey area, the quarry offers a unique unvegetated habitat that potentially can be used by bats. The quarry was surveyed on two separate occasions for bat use (see Table 3.3-6), between four and 10 bats were observed flying in the vicinity of the quarry. No bat guano or rock staining from bats and no areas of whitewash or old bird nests were found, suggesting that predators can reach most areas of the quarry. Climbing predators such as raccoons, weasels and snakes could reach most locations on the rough sloping surfaces. There are very few natural cracks or fissures in the rock faces.

Fisheries

Lake Perris is currently stocked and managed as a recreational fishery supporting almost exclusively non-native warm-water fishes. Common fish species in the lake include largemouth bass (*Micropterus salmoides*), channel catfish (*Ictalurus punctatus*), bluegill (*Lepomis macrochirus*), spotted bass (*Micropterus punctulatus*), flathead catfish (*Pylodictis olivaris*), green sunfish (*Lepomis cyanellus*), redear sunfish (*Lepomis microlophus*), and black crappie (*Pomoxis nigromaculatus*) (Podlech, 2007)). The CDFG plants rainbow trout (*Oncorhynchus mykiss*) in Lake Perris from October through May. Because rainbow trout require lower temperatures and flowing water for reproduction, it is stocked yearly as it does not reproduce in the lake. Warm-water fishes such as the largemouth bass and bluegill are found on the surface layers of the lake where emergent vegetation, algae and invertebrates provide food and shelter. Coldwater fishes, like the rainbow trout, are found in deeper sections of the lake where temperatures are lower. Brief life history summaries for the three most abundant shallow water fish species in Lake Perris are provided below.

Largemouth bass

Largemouth bass spawning occurs in the spring when water temperatures reach about 60°F. Males build the nests in two to eight feet of water and prefer to nest in quieter, more vegetated water, but will use any substrate besides soft mud, including submerged logs. Once the female has laid eggs in the nest (2,000 to 43,000) she is chased away by the male who then guards the eggs. The young, called fry, hatch in five to 10 days and remain in a group or "school" near the nest and under the male's watch for several days after hatching. Juvenile largemouth bass may continue to congregate in schools, but adults are usually solitary. Largemouth bass hide among

plants, roots or submerged limbs to strike their prey. Fry feed primarily on zooplankton and insect larvae. At about two inches in length they become active predators. Adults feed almost exclusively on other fish including bass and large invertebrates such as crayfish.

Bluegill

Bluegills begin spawning when water temperatures reach about 70°F. Spawning may peak in May or June, but continues until water temperatures cool in the fall. Because of their long spawning season, bluegills have very high reproductive potential, which often results in overpopulation in the face of low predation or low fishing pressure. Nests are created in shallow water, one to two feet in depth, primarily in gravel substrates. Fifty or more nests may be crowded into a small area, thus creating a spawning bed. Males guard the nest until the eggs hatch and fry leave. Young fish feed on plankton, but as they grow the adult diet shifts to aquatic insects and other aquatic larvae.

Redear sunfish

Redear sunfish spawn during the warm months of late spring and early summer, and in deeper water than most other sunfish, congregating in spawning beds. Nests are saucer-shaped depressions in gravel or silt, and are sometimes so close they almost touch. There are usually one or two peaks of activity during the spawning season. Redear sunfish feed primarily on snails as a major food item, although insect larvae may also be found in their diet. The species is usually found near the bottom in warm water with little current and abundant aquatic vegetation.

Waterfowl

The open water of Lake Perris and surrounding freshwater marsh provides roosting, resting and feeding habitat for waterfowl. Although used by waterfowl in the summer by species such as mallards and western grebes, Lake Perris is most heavily utilized in the winter by migratory ducks and geese, including wigeons (*Anas americana*), pintails (*Anas acuta*), gadwalls (*Anas strepera*), green-winged teals (*Anas crecca*), shovelers (*Anas clypeata*), and Canada geese (*Branta Canadensis*). Lake Perris is located within the Pacific Flyway, a large north-south migratory route extending between South America and parts of Canada and Alaska. No available estimates of number of waterfowl were available for Lake Perris itself, and surveys were not conducted over the winter when large numbers of waterfowl were present. **Table 3.3-5** shows the average number of waterfowl per species observed in the Audubon Society's San Jacinto Christmas Bird Count Circle over a 10-year period. The count circle is 15 miles in diameter and encompasses Lake Perris. The other large water source within the count circle radius is Mystic Lake, which though smaller than Lake Perris, similarly supports a large number of waterfowl in the winter. Lake Perris supports perhaps slightly more than half the number of waterfowl listed in Table 3.3-5.

3.3.5 Special-Status Species

Special-status plant and wildlife species include those listed as threatened, endangered, rare, or proposed/candidate species as threatened or endangered by the USFWS or CDFG. In addition, special-status species include California Special Concern Species as shown on the CDFG lists of special plants and animals, and California Native Plant Society (CNPS) listed plants. A special-

TABLE 3.3-5
AUDUBON CHRISTMAS COUNT WATERFOWL AND WATERBIRDS IN THE LAKE PERRIS/ SAN JACINTO AREA

	Count per Year[a,b]											
Species	**97**	**98**	**00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**Average**
Canada Goose	80	297	296	213	208	180	171	440	316	571	259	337
Gadwall	940	632	368	411	128	195	340	740	355	143	332	509
American Wigeon	16255	14385	13187	9138	7765	1873	5102	8631	1372	6485	3053	9694
Mallard	845	608	369	745	511	388	438	168	315	242	321	550
Cinnamon Teal	171	206	60	72	100	116	33	11	468	45	116	155
Northern Shoveler	3247	2342	6308	13030	3941	5059	1573	6768	3043	2507	8094	6212
Northern Pintail	2076	1003	1175	1211	7560	744	1110	681	4551	952	890	2439
American Green-winged Teal	2251	964	1167	3091	4010	1874	1392	1268	741	544	1845	2127
Canvasback	55	53	44	129	71	175	481	119	89	147	157	169
Ring-necked Duck	258	366	87	222	578	205	473	695	84	63	150	353
Lesser Scaup	509	453	275	106	128	189	176	134	24	93	33	236
Bufflehead	85	83	244	30	220	136	138	88	70	113	150	151
Ruddy Duck	2453	1692	1476	2560	1243	4375	1695	1298	4448	1567	2087	2766
Eared Grebe	1544	342	411	183	619	374	285	303	662	159	181	563
Western Grebe	346	216	1150	255	250	601	204	1600	869	520	147	684
American White Pelican	821		227	18	30	3	38	3	13	169	6	148
Double-crested Cormorant	198	46	234	103	152	35	127	54	114	18	35	124
Cattle Egret	644	251	67	432	164	267	71	162	52	168	2	253
White-faced Ibis		28	3	240	256	117	334	348	234	143	283	221
Red-tailed Hawk	145	126	93	107	101	117	90	117	140	92	175	145
American Coot	4738	5385	3590	3635	3329	7022	3445	4190	4855	2894	3888	5219
Killdeer	232	645	240	325	405	154	239	120	83	115	94	295
Black-necked Stilt	211	444	262	480	370	540	292	317	398	330	299	438
American Avocet	60	156	121	442	211	231	107	41	145	65	129	190
Least Sandpiper	917	211	350	1865	436	282	320	481	655	386	312	691
Long-billed Dowitcher	798	482	2625	2057	379	234	690	319	1984	390	611	1174
Bonaparte's Gull	379	410	131	650	100	1	566	51	163	70		280
Ring-billed Gull	2060	1803	1728	1167	1060	1670	1912	450	2491	1791	1884	2002
California Gull	633	1754	1632	1299	2147	2322	1860	2800	536	1490	3684	2240
gull sp.	150	68	1900							172	76	263

[a] Count for year 97 was conducted in Dec. 1996, count for year 98 was conducted in Dec. 1997, and so on. Only species with 100 individuals or more are shown.
[b] No data was taken for count year 99.

status species is considered to potentially occur in the project area if its known geographic range includes part of or is in the near vicinity of the project area and/or if the general habitat requirements or environmental conditions (e.g., soil type, etc.) required for the species are present within the project area. The potential for special-status species to occur was evaluated on a habitat basis for the project site, by incorporating the results of prior surveys, and using the reconnaissance-level surveys conducted by Psomas in 2007 (**Table 3.3-6**). As stated in the Methods Section of this report, protocol surveys conducted by Psomas included least Bell's vireo, California coastal gnatcatcher, and Los Angeles pocket mouse.

TABLE 3.3-6
SURVEYS CONDUCTED AT LAKE PERRIS

Survey Target Species	Date Conducted
Stephens' kangaroo rat	August 7 through August 17, 2006 and November 1 through November 8, 2006[a]
	June 15 through June 20, 2008
Common plants and wildlife, and habitat areas	May 9, May 30, June 5, June 12, June 14, June 26, August 1, August 26, September 2, and September 20, 2007
Southwestern willow flycatcher	May 31, June 7, June 21, June 28 and July 11, 2007
	May 31, June 9, June 23, July 2, and July 11, 2008
Least Bell's vireo	May 31, June 7, June 14, June 21, June 27, July 5, July 12, July 18, and July 26, 2007
	April 17, April 18, April 29, May 2, May 12, May 16, May 30, June2, June 9, June 13, June 23, June 24, July 3, July 8, July 14, and July 18, 2008
	April 10, 13, 20, 23, May 1, 4, 11, 14, 21, 26, June 1, 9, 11, 15, 22, and 25, 2009
California gnatcatcher	July 5, July 12, July 18, July 26, August 1, August 17, September 10, September 28, October 11, October 24, and November 8, 2007
	April 17, April 24, May 2, May 10, May 16, and May 23, 2008
Bat assessment	August 1 and September 2, 2007
Los Angeles pocket mouse	September 24 through September 29, 2007
Rare Plant Surveys	April 29 and June 2, 2008

[a] **Surveys conducted by Riverside County RCA**

SOURCE: Psomas, 2008

During the field surveys, the potential for species listed in **Table 3.3-7** to occur within the proposed project area was assessed. The potential for any of the assessed species to occur within the SRA outside of the surveyed area is outside the scope of this analysis. The potential for any species to occur was rated as low, moderate, or high based on the following criteria:

- *No Potential to Occur*: Species with no potential for occurrence are those for which the proposed project area is not within or near the boundary of the known range of the species and for which there is no suitable habitat to support the species.

- *Low Potential to Occur*: Species with a low potential for occurrence are those for which the proposed project area is on the boundary of the known range of the species, or those for which the proposed project area is within the boundary of the known range of the species and for which suitable habitat in the proposed project area is not known to be used by the species, or for which there are no known recorded occurrences of the species within or adjacent to the proposed project area.
- *Moderate Potential to Occur*: Species with a moderate potential for occurrence are those for which habitat is present, the proposed project is within the known range of the species, and one or more surveys did not detect the species. No nearby occurrences are known. Failure to detect the species is not definitive, and may be due to variable effects associated with fire, rainfall patterns and/or time of year.
- *High Potential to Occur*: Species with a high potential for occurrence are those for which habitat is present, the proposed project is within the known range of the species, and the species has been observed in similar habitat in the region by a qualified biologist.
- *Known to Occur*: Species with previously recorded occurrences within the project area and/or observed during field surveys.

Special-Status Plants

Table 3.3-7 summarizes results and conclusions from the field surveys and the literature review with regard to the potential for the occurrence of listed, candidate, state rare, or CNPS tracked plant species within the study area. A standard in the professional practice of botany is to conclude species absence only after sufficient review of the literature and appropriately timed field surveys including but not limited to:

- Where the species is detectable without flowers or fruits (e.g., perennial shrubs with distinctive vegetative features).
- Suitable habitat is clearly absent such as the lack of a specific soil type required by a species.
- Seasonally appropriate surveys conducted during years of adequate rainfall or surveys over several years have not detected the species.

In general and outside of these limited cases, even with field surveys, botanists assess probability of occurrence rather than make a definitive conclusion about species presence or absence. Failure to detect the presence of the species is not definitive, and may be due to variable effects associated with fire, rainfall patterns, and/or season.

The timing of the field surveys for the Lake Perris project was considered suitable for the identification of most, but not all potential special-status plant species. Conducting the field surveys in the late spring and summer decreased the detection of fall, winter and early spring blooming plant species. There were a number of plants in bloom, but there were also a number of plants not yet in bloom and a number of plants that had already bloomed and gone to seed. Therefore, an effort was made to determine presence or absence of potentially suitable habitat for those plants that could not be identified at that time. A complete list of plant species observed during biological resources surveys is provided in Table 3.3-2.

Listed Endangered, Threatened, Candidate and State Rare Plant Species

No plant species listed as endangered, threatened, candidate, or state rare pursuant to the federal or state Endangered Species Act were observed on the biological survey area during the field surveys. No plant species designated as a CDFG special plant, tracked by the CNPS, or locally important were observed within the proposed project area during the field surveys. However, because of the time of year in which the surveys took place, a habitat assessment was performed for potentially suitable habitat conditions to support special-status plant species, especially for annual species that appear above ground in a vegetative stage earlier or later in the year. As a result of the field surveys and the literature review, it was concluded that no listed plant species have more than a low potential to exist on or adjacent to the proposed project site (**Table 3.3-7**).

Special-Status Wildlife

Table 3.3-7 summarizes the results and conclusions from the literature review and field surveys regarding the potential for occurrence of special-status wildlife species within the study area. A standard in the professional practice of wildlife biology is to conclude species absence only after sufficient review of the literature, appropriately timed field surveys, or implementation of agency approved species-specific survey protocols that includes but is not limited to:

- Where the species known range and historic range is over 25 miles from the proposed project site.
- Suitable habitat is clearly absent.
- Seasonally appropriate and/or protocol surveys have been conducted, or surveys over several years have not detected the species.

In general and outside of these limited cases, even with field surveys, wildlife biologists assess probability of occurrence rather than make definitive conclusions about species presence or absence. Failure to detect the species is not definitive, and may be due to variable effects associated with fire, rainfall patterns and/or season.

During the field surveys, many species of wildlife that could potentially utilize the proposed project site may not have been present because they occur only on a seasonal basis. Many species are nocturnal, move about a territory, or may have become dormant for the season. A single day survey cannot be used to conclusively determine absence except when potentially suitable habitat can be determined to be absent. However, the potential for the site to provide suitable habitat for special-status species was evaluated.

TABLE 3.3-7
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Listed Endangered, Threatened, Candidate and State Rare Plants						
Ambrosia pumila	dwarf burr ambrosia (San Diego ambrosia)	FE, CNPS:1B.1	San Diego ambrosia occurs in open habitats such as chaparral and coastal sage scrub in coarse substrates near drainages, and in upland areas on clay slopes or on the dry margins of vernal pools. This species occurs in a variety of associations that are dominated by sparse grasslands or marginal wetland habitats such as river terraces, pools, and alkali playas. In Riverside County, San Diego ambrosia is associated with open, gently-sloped grasslands and is generally associated with alkaline soils. Blooming period: Apr – Oct.	San Diego ambrosia is distributed from western Riverside County and western San Diego County, California south in widely scattered populations along the west coast of Baja California, Mexico. The majority of the California populations occur in San Diego County, where approximately 11 distinct populations have been reported along with two transplanted populations. San Diego ambrosia generally occurs at low elevations generally less than 1600 feet in the Riverside populations and less than 600 feet in San Diego County.	Covered (b)	**No potential to occur.** The Biological Survey Area lacks suitable soils and substrates to support this species. This species is also not known to occur within the LPSRA or the immediate region. Not observed during Psomas 2008 Rare Plant Surveys.
Berberis nevinii	Nevin's barberry	FE, SE, CNPS:1B.1	Grows in alluvial scrub community on sandy and gravelly substrates along the margins of dry washes. In the chaparral community, it grows on steep, north-facing slopes with coarse soils and rocky slopes. It has also been found in cismontane woodlands, riparian scrub, and coastal sage scrub. Occurs in wetlands in another region, but occurs almost always under natural conditions in non wetlands in California. Blooming period: Mar – Apr.	Nevin's barberry is endemic to southwestern cismontane southern California. It occurs in restricted localized populations from the interior foothills of the San Gabriel Mountains of Los Angeles County and San Bernardino County southeast to near the foothills of the Agua Tibia Mountains of southwestern Riverside County. Scattered naturalized populations have been established outside this range in San Diego County. Elevational range: 970 – 2700 feet MSL.	Covered (b, d)	**Low potential to occur.** Potentially suitable habitats and substrates are present within the Biological Survey Area. This species was not observed. Another species of barberry, Fremont's barberry (Berbis fremontii) was observed during the surveys. Nevin's barberry is not known to occur within the LPSRA or the immediate region. Not observed during Psomas 2008 Rare Plant Surveys.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Atriplex coronata var. notatior	San Jacinto Valley crownscale	FE, CNPS:1B.1	San Jacinto Valley crownscale occurs primarily in floodplains (seasonal wetlands) on moist, alkaline soils dominated by alkali chenopod scrub, alkali playas, vernal pools, and, to a lesser extent, alkali grasslands. Blooming period: Apr – Aug.	This species is restricted to the San Jacinto Valley, Perris Valley, Elsinore Valley and Menifee Valley of western Riverside County. The majority of known occurrences are in the vicinity of Hemet on white-clay soils along the San Jacinto River and Old Salt Creek tributary drainages. Elevational range: 455 – 1640 feet MSL.	Covered (a, d)	**Low potential to occur.** The Biological Survey Area lacks suitable floodplains habitat and suitable alkaline soils to support this species. Not observed during Psomas 2008 Rare Plant Surveys.
Navarretia fossalis	Moran's navarretia (spreading navarretia)	FT, CNPS:1B.1	The primary habitat for this species is vernal pools and depressions and ditches in areas that once supported vernal pools in saline-alkaline soils. It can also be found in artificial roadside ditches. It has been found in alkaline or saline scrubs (chenopod scrub) and playas, shallow freshwater marshes and swamps. Occurs almost always under natural conditions in wetlands. Blooming period: Apr – Jun.	Fewer than 30 occurrences exist throughout its range in Los Angeles, Riverside and San Diego counties to Baja California, Mexico. Most populations occur in three locations: on Otay Mesa, southwestern San Diego County; along the San Jacinto River in western Riverside County; and near Hemet also in Riverside County. Elevational range: 98 – 4265 feet MSL.	Covered (a, b)	**Low potential to occur.** The Biological Survey Area lacks appropriate vernal pools habitat and saline-alkaline soils to support this species. Not observed during Psomas 2008 Rare Plant Surveys.
Allium munzii	Munz' onion	FE, ST, CNPS:1B.1	Munz's onion is found on mesic exposures or seasonally moist microsites in grassy openings in coastal sage scrub, chaparral, juniper woodland, cismontane woodland, valley and foothill grasslands in clay soils. Blooming period: Mar – May.	Fewer than 15 occurrences of Munz's onion remain. All are located in western Riverside County. Found from Corona through Temescal Canyon and along the Elsinore Fault Zone to the southwestern foothills of the San Jacinto Mountains. Elevational range: 984 – 3510 feet MSL.	Covered (b)	**Low potential to occur.** The Biological Survey Area does not contain suitable habitat and it lacks appropriate clay soils to support this species. However, this species is known to occur within the immediate region of the LPSRA. Not observed during Psomas 2008 Rare Plant Surveys.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Brodiaea filifolia	thread-leaved brodiaea (threadleaf clusterlily)	FT, SE, CNPS:1B.1	This species typically occurs on gentle hillsides, valleys, and floodplains in semi-alkaline mudflats, vernal pools, mesic southern needlegrass grassland, mixed native-nonnative grassland and alkali grassland plant communities in association with clay, loamy sand, or alkaline silty-clay soils. This plant grows on various substrates ranging from clay to fine sand. It occurs in open valley and foothill grasslands, at the edge of vernal pools, flood plains, playas and openings in chaparral, cismontane woodlands or coastal scrub. It is equally likely to occur in wetlands or non wetlands. Blooming period: Mar – Jun.	Thread-leaved brodiaea occurs in a few scattered localities within Los Angeles, Orange, western Riverside, and northwestern San Diego counties. Small populations of the species occur on Fish and Game's lands at the San Jacinto Wildlife Area in Riverside County and Carlsbad Highlands in San Diego County. A significant population occurs on The Nature Conservancy's Santa Rosa Plateau in western Riverside County and a small population occurs in Aliso-Wood Canyons Regional Park in Orange County. Elevational range: 82 – 2821 feet MSL.	Covered (a, b, d)	**Moderate potential to occur.** The Biological Survey Area contains suitable grassland and coastal sage scrub habitats with suitable soils and substrates to support this plant. This species is also known to occur within the immediate region of the LPSRA. Not observed during Psomas 2008 Rare Plant Surveys.
Special-Status Plants						
Symphyotrichum defoliatum (=*Aster bernardinus*)	San Bernardino aster	CNPS:1B.2	Found in cismontane woodlands, coastal scrub, lower montane coniferous forests, meadows and seeps, marshes and swamps, and vernally mesic valley and foothill grasslands. Can be found near ditches, streams, springs or disturbed areas. Grows in seasonally moist fine alluvial soils. Blooming period: Jul – Nov.	Found in Kern, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. Elevational range: 6 – 6691 feet MSL.	X	**Moderate potential to occur**. The Biological Survey Area contains suitable coastal sage scrub habitat to support this species. This species is also known to occur within the immediate region of the LPSRA. Not observed during Psomas 2008 Rare Plant Surveys.
Centromadia pungens ssp. laevis (=*Hemizonia pungens* ssp. *laevis*)	smooth tarplant	CNPS:1B.1	Smooth tarplants occur in a variety of habitats including alkali scrub, alkali playas, riparian woodland, watercourses, and grasslands with alkaline affinities. Also found on disturbed places. Blooming period: Apr – Sept.	Found in Riverside, Orange, San Diego and San Bernardino counties. Western Riverside County accounts for over 60 percent of the reported populations: the San Jacinto Wildlife Area, Salt Creek, the City of Hemet and San Jacinto, and in the Murrieta/Temecula area. Elevational range: 0 – 1574 feet MSL.	Covered (a, b, d)	**Moderate potential to occur.** The Biological Survey Area lacks suitable alkaline habitat. However, this species is known to occur within the immediate region of the LPSRA.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	CNPS:1B.1	Coulter's goldfields are associated with low-lying alkali habitats along the coast and in inland valleys. The majority of the populations are associated with coastal salt marsh. Coulter's goldfields occur primarily in the alkali vernal plains community. These are floodplains dominated by alkali scrub, alkali playas, vernal pools, and, alkali grasslands. These habitats form mosaics that are largely dependent on salinity and micro-elevational differences. Blooming period: Feb – Jun.	Coulter's goldfields are distributed from coastal San Luis Obispo County south through coastal Santa Barbara County, Ventura County, Los Angeles to San Diego County and northwestern Baja California. Interior valley populations have been recorded from the Carrizo Plain of San Luis Obispo County south through Tehachapi (Kern County), Twenty Nine Palms (San Bernardino County), and cismontane western Riverside County, to the Ojos Negros Valley east of Ensenada, Mexico. Elevational range: 3 – 4002 feet MSL.	Covered (a, b, d)	**Low potential to occur.** The Biological Survey Area lacks appropriate alkali habitats and soils to support this species. However, this species is known to occur within the immediate region of the LPSRA.
Senecio aphanactis	chaparral ragwort (rayless ragwort)	CNPS: 2.2	Chaparral, cismontane woodland, coastal scrub (sometimes alkaline) and drying alkaline flats. Blooming period: Jan – Apr.	Found in Alameda, Contra Costa, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, Santa Barbara, Santa Clara, San Diego, San Luis Obispo, Solano, and Ventura counties. Elevational range: 50 – 2624 feet MSL.	X	**Moderate potential to occur.** The Biological Survey Area contains suitable coastal sage scrub habitat to support this species. This species is also known to occur within the immediate region of the LPSRA.
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	CNPS: 2.1	Found in meadows and seeps, marshes and swamps, riparian forest and vernal pools/alkaline. Also found on mud flats of vernal lakes, drying river beds, and alkali meadows. In Riverside County, Wright's trichocoronis is found in the alkali vernal plains and associated with alkali playa, alkali annual grassland, and alkali vernal pool habitats. It is highly dependent on alkaline soils that are saturated for extended periods of time. Blooming period: May – Sept	Found in Riverside and Merced counties. Nearly extirpated in the Central Valley. This species is known only from four locations along the San Jacinto River from the vicinity of the Ramona Expressway and San Jacinto Wildlife Area and along the northern shore of Mystic Lake. Only two locations on either side of the Ramona Expressway have been seen in recent years. Elevational range: 16 – 1426 feet MSL.	Covered (a, b)	**Low potential to occur.** The Biological Survey Area lacks suitable alkali habitats and soils to support this species.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	CNPS:1B.2	Dry soils on chaparral and coastal sage scrub. Blooming period: Jan – Jul.	Found in Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. Elevational range: 3 – 2903 feet MSL.	X	**Low potential to occur.** The Biological Survey Area contains suitable coastal sage scrub habitat to support this species; however this species is not known to occur within the region of the LPSRA.
California macrophylla (=*Erodium macrophyllum*)	round-leaved filaree (large-leaf filaree)	CNPS:1B.1	This species is restricted to open cismontane woodland and valley and foothill grassland habitats on very friable clay soils. Blooming period: Mar – May.	In southern California, found in Kern, Los Angeles, Riverside, San Diego, and Ventura counties. Elevational range: 50 – 3937 feet MSL.	Covered (d)	**Low potential to occur.** The Biological Survey Area generally lacks suitable habitats with friable clay soils to support this species. This species is known to occur within the region of the LPSRA.
Nama stenocarpum	mud nama (mud fiddeleaf)	CNPS: 2.2	Found along marshes, swamps, lake shores, river banks, stream banks and intermittently wet areas. Blooming period: Jan – Jul.	Found in Los Angeles, Orange, Riverside, Imperial and San Diego counties. Elevational range: 16 – 1640 feet MSL.	Covered (a, b, d)	**Moderate potential to occur.** The Biological Survey Area contains marshes along the lake shore; However, these soils are sandy and wekk drained. This species is not known to occur within the region of the LPSRA.
Sidalcea neomexicana	salt spring checkerbloom (mountain sidalcea)	CNPS: 2.2	Found in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, alkali playas, and brackish marshes.Blooming period: Mar – Jun.	Found in Kern, Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties. Elevational range: 50 – 5018 feet MSL.	X	**Low potential to occur.** The Biological Survey Area contains suitable coastal sage scrub habitat to support this species; however this species is not known to occur within the region of the LPSRA.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Abronia villosa var. *aurita*	chaparral sand-verbena	CNPS:1B.1	Found in sandy soils of chaparral, coastal scrub, and desert dunes. Blooming period: Jan – Sept.	Found in Riverside, San Bernardino and San Diego counties. Elevational range: 262 – 5249 feet MSL.	X	**Moderate potential to occur.** The Biological Survey Area contains suitable coastal sage scrub habitat. This species is known to occur within the region of the LPSRA.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower (knotweed spineflower)	CNPS:1B.2	Long-spined spineflower is associated primarily with heavy, often rocky, clay soils in valley and foothill grasslands, and openings in coastal sage scrub, and chaparral. Occasionally this species is associated with mountain meadows in sandy loam soil as at Cuyamaca State Park or in sandy or gravelly soils as on Kearney Mesa or Cutca Valley in San Diego County. Blooming period: Apr – Jul.	Populations found in Orange, western Riverside, San Diego and Santa Barbara counties. Elevational range: 100 – 4760 feet MSL.	Covered	**Moderate potential to occur.** The Biological Survey Area contains suitable soils, valley and foothill grasslands and coastal sage scrub habitats to support this species. This species is also known to occur within the region of the LPSRA.
Myosurus minimus ssp. *apus*	little mousetail	CNPS: 3.1	In southern California, little mousetail occurs in association with vernal pools and within the alkali vernal pools and alkali annual grassland components of alkali vernal plains. Little mousetail is found in areas that have semi-regular inundation. Blooming period: Mar – Jun.	Found in Riverside, San Bernardino, San Diego, Alameda, Contra Costa, Colusa, Lake, Merced, Solano, Tulare, Baja California, and Oregon. Most southern California populations are relatively small. The two largest concentrations of little mousetail are on the Otay Mesa of San Diego County and at Salt Creek west of Hemet in Riverside County. Elevational range: 65 – 2100 feet MSL.	Covered (a, b, d)	**No potential to occur.** The Biological Survey Area lacks suitable vernal pools and associated alkali habitats and soils to support this species. This species is not known to occur at LPSRA.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Lycium parishii	Parish's desert-thorn	CNPS: 2.3	Found in coastal sage scrub and Sonoran desert scrub. Blooming period: Mar – Apr.	Found in Riverside, San Diego and Imperial counties. Elevational range: 1000 – 3280 feet MSL.	X	**Low potential to occur.** The Biological Survey Area lacks suitable desert habitat to support this species. Coastal sage scrub habitat is present; this species is not known to occur within the region of the LPSRA.
Calochortus plummerae	Plummer's mariposa lily	CNPS:1B.2	This plant prefers openings in chaparral, foothill woodland, coastal sage scrub, valley and foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. They are found on dry, rocky slopes and soils and brushy areas. Can be very common after fire. Blooming period: May – Jul.	Found in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. Elevational range: 330 – 5580 feet MSL.	Covered (e)	**Moderate potential to occur.** The Biological Survey Area supports suitable habitats and substrates to support this species. This species is known to occur within the region of the LPSRA.
Hordeum intercedens	vernal barley	CNPS: 3.2	Vernal barley is associated with mesic grasslands, vernal pools, and large saline flats or depressions. In Riverside County, vernal barley is associated with alkali flats and flood plains within the alkali vernal plains community. Within this community vernal barley is primarily associated with alkali annual grasslands and vernal pools and to a lesser extent alkali scrub and alkali playa. Can also be found on coastal dunes, coastal scrub, and alkaline valley/foothill grasslands. Blooming period: Mar – Jun.	Vernal barley occurs in scattered locations bordering the Central Valley of central California. In southern California it has been reported from Santa Barbara, Ventura, Los Angeles, Orange, Riverside, and San Diego Counties. Elevational range: 16 – 3280 feet MSL.	Covered (a)	**No potential to occur.** The Biological Survey Area lacks suitable alkaline habitats and soils to support this species. This species is known to occur within the region of the LPSRA.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Listed Endangered, Threatened, and Candidate Wildlife						
Amphibians						
Bufo californicus	arroyo toad	FE, SSC	A toad of sandy riverbanks, streams, washes, and arroyos. Breeds in and near streams. It frequents riparian areas grown to mule fat, willows, cottonwoods, and/or sycamores or coast live oaks in valley-foothill and desert riparian as well as a variety of more arid habitats including desert wash, palm oasis, and Joshua tree, mixed chaparral and sagebrush. It requires shallow (3 -10 inches deep), exposed streamside, quiet water stretches, or overflow pools with silt-free sandy or gravelly bottoms especially favored for breeding. Nearby sandy terraces, dampened in places by capillary action, and with some scattered vegetation providing surface sheltering and burrowing sites and foraging areas.	The arroyo toad is found in the coastal plain, coastal slopes and coastal mountain streams of southern California west of the desert in southern Monterey County (San Antonio River) southward through the Transverse and Peninsular ranges to the Rio Santo Domingo (Baja California, Mexico). They also occupy a few drainages on the desert slopes of the San Gabriel and San Bernardino ranges. Desert populations found along lower Whitewater River in Riverside County and Mojave River in San Bernardino County. Its known elevational range extended from near sea level to 4600 feet msl in California.	Covered (a, c)	**No potential to occur.** The Biological Survey Area does not contain suitable breeding water and substrate habitats to support this species. It is a toad of sandy riverbanks, streams, washes, and arroyos. Human disturbance and exotic species make presence unlikely. This species is not known to occur within the LPSRA, however it is known from the immediate region.
Birds						
Haliaeetus leucocephalus	bald eagle (nesting and wintering)	SE, Fully Protected	Range-wide, bald eagles occur primarily in or near seacoasts, rivers, wetlands swamps, and large lakes. Requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches and nesting sites to support them. Perching sites need to be composed of large trees or snags with heavy limbs or broken tops. It roosts communally in winter in dense, sheltered, remote conifer stands. The State's breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers.	Bald eagles breeds mostly in low mountain areas up to 7000 feet msl in the northern third of the state. Most breeding territories are in northern California, but the eagles also nest in scattered locations in the central and southern Sierra Nevada mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island. They winter throughout California, except in the highest mountains and the driest southern deserts; however it is found along parts of the Colorado River.	Covered (a)	**Known to occur (seasonally).** The Biological Survey Area provides potential foraging and roosting habitat for this species during winter migration. Bald eagles are known to use the LPSRA during the winter. The bald eagle is primarily a winter migrant within western Riverside County. Bald eagles have attempted to breed at LPSRA, but were unsuccessful.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Falco peregrinus anatum	American peregrine falcon (nesting)	SE, Fully Protected	Peregrines are found in a large variety of open habitats, including tundra, marshes, seacoasts, savannahs and high mountains. The species breeds mostly in woodland, forest, wetlands, cities, agricultural areas and coastal habitats. Open ledges, caves, and potholes on high, vertical cliffs, generally 100 to 300 feet in height that overlook rivers, lakes, or the ocean provide peregrines with suitable nesting sites.	The range includes most of California, except in deserts, during migrations and in winter. During the breeding season, the birds are most often sighted along the coastline of the entire state, in the Sierra Nevada, and in other mountains of northern California. In winter, found inland throughout the Central Valley, and occasionally on the Channel Islands. Migrants occur along the coast and in the western Sierra Nevada in spring and fall.	Covered (a)	**Known to occur.** Observed during the field surveys by Psomas and known to occur seasonally at LPSRA. The peregrine falcon is primarily a rare spring and fall transient and a casual visitant during other seasons of the year. There are no breeding records documented for the species in the Biological Survey Area.
Empidonax traillii extimus	southwestern willow flycatcher (nesting)	FE, SE	Southwestern willow flycatchers arrive in southern California in April and adults depart from the breeding territory in mid-August to early September. They utilize riparian woodlands along streams and rivers with mature, dense stands of willows and cottonwoods. Riparian habitat provides both breeding and foraging habitat for the species. They nest from zero to 13 feet above ground in thickets of trees.	It occurs from near sea level to over 8500 feet msl, but is primarily found in lower elevation riparian habitat in southern California. Breeds in California from the Mexican border north to the Owens Valley, the South Fork Kern River, and Santa Ynez River in Santa Barbara County.	Covered (a)	**Known to occur.** This species was not observed during focused SWFL surveys. However, this species has been observed within the LPSRA. The Biological Survey Area contains suitable breeding and foraging riparian woodland habitat to support this species. Species not observed during Psomas 2008 protocol surveys.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Vireo bellii pusillus	least Bell's vireo (nesting)	FE, SE	Least Bell's vireos primarily occupy riverine riparian habitats that typically feature dense cover within 1-2 m of the ground and a dense, stratified canopy. Typically it is associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodland, coast live oak riparian forest, arroyo willow riparian forest, or mesquite in desert localities. It uses habitat which is limited to the immediate vicinity of water courses. 2,000 feet elevation in the interior.	A spring and summer resident of southern California. The subspecies is currently restricted to southern California south of the Tehachapi Mountains, along the coast and the western edge of the Mojave Desert to northwestern Baja California below 2000 feet in elevation. Breeding pairs have been observed in the counties of Monterey, San Benito, Inyo, Santa Barbara, San Bernardino, Ventura, Los Angeles, Orange, Riverside, and San Diego.	Covered (a)	**Known to occur (seasonally).** Observed during the focused LBV field surveys by Psomas2008 and known to occur seasonally at LPSRA. During the focused LBV surveys, this species was observed below the dam and near the proposed project area in the riparian band on the east shore of the lake.
Polioptila californica californica	coastal California gnatcatcher	FT, SSC	A non-migratory, permanent resident of coastal sage scrub habitat, which is a broad category of vegetation. They also use adjacent chaparral, grassland and riparian habitats for foraging.	They are restricted to coastal slopes of southern California from Ventura and western San Bernardino counties south to northern Baja below 1500 feet msl. May still occur along lower, coastal slopes of San Gabriel and San Bernardino Mountains in Los Angeles and San Bernardino counties, but status is uncertain. Their breeding period is from February to August.	Covered	**Known to occur.** CAGN was not observed during the focused CAGN surveys conducted by Psomas (2007). However, this species has been observed within the LPSRA. Suitable foraging and breeding coastal sage scrub habitat is present within the Biological Survey Area.
Mammals						
Dipodomys merriami parvus	San Bernardino kangaroo rat	FE, SSC	The San Bernardino kangaroo rat typically is found in early to intermediate stage alluvial fan sage scrub along river and stream terraces, and flood plains. Sandy loam substrates allow for the digging of simple, shallow burrows. They require open, sparse shrub vegetation and they actively avoid rocky substrates and areas with dense vegetation.	The San Bernardino kangaroo rat occurs in scattered, isolated patches of alluvial sage scrub habitat throughout San Bernardino and Riverside counties. The remaining three locations (Santa Ana River, Lytle Creek Wash and Cajon Creek Wash, and San Jacinto River) contain the largest extant concentrations of San Bernardino kangaroo rats.	Covered (c)	**Low potential to occur.** The Biological Survey Area does not contain suitable habitats to support this species.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Dipodomys stephensi	Stephens' kangaroo rat	FE, ST	The Stephens' kangaroo rat is found in open annual and perennial grasslands or sparse shrublands such as coastal sage scrub with cover of less than 50%. They avoid areas with dense grass cover. They require friable soils and avoid rocky soils and they use flatter slopes.	Stephens' kangaroo rat is restricted to the San Jacinto Valley and adjacent areas in western Riverside County and northern-central San Diego County. It is found at elevations ranging from approximately 180 feet msl on Camp Pendleton in San Diego County to 4100 feet in the Anza Valley.	Covered	**Known to occur.** The Biological Survey Area below the dam contains suitable grassland and coastal sage scrub habitat with suitable soils to support this species. This species is known to occur within the LPSRA.
Special-Status Wildlife						
Amphibians						
Spea hammondii	western spadefoot	SSC	A vernal pool associated species that uses upland areas such as coastal sage scrub, and grasslands habitats for aestivation. They require rain pools/vernal pools in which to reproduce and that persist with more than three weeks for metamorphosis. Pools must lack fish, bullfrogs, and crayfish.	It is a California near endemic ranging from Shasta County southward into Baja California restricted to west of the Sierran-desert range axis. The western spadefoot ranges throughout the Central Valley and adjacent foothills. In the Coast Ranges it is found from Point Conception, Santa Barbara County, south to the Mexican border. Elevations of occurrence extend from near sea level to 4471 feet in the southern Sierra foothills.	Covered (a)	**Low potential to occur.** The Biological Survey Area does not support vernal pools or other ponding areas that the spadefoot needs in order to reproduce. This species is not known to occur within the LPSRA, but found within the immediate region.
Reptiles						
Actinemys marmorata pallida *(=Emys marmorata pallida)*	southwestern pond turtle	SSC	Inhabits slow moving permanent or intermittent streams, small ponds, small lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and sewage treatment lagoons. Pools are the preferred habitat within streams. Abundant logs, rocks, submerged vegetation, mud, undercut banks, and ledges are necessary habitat components for cover as well as a water depth greater than 2 m.	Currently, it ranges south of San Francisco Bay to northern Baja California, Mexico.	Covered (a)	**No potential to occur.** Human disturbance and exotic species make presence unlikely. This species is not known to occur within the LPSRA or the immediate region.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Coleonyx variegatus abbotti	San Diego banded gecko	ND	This species is found in granite or rocky outcrops in coastal scrub and chaparral habitats within coastal and cismontane southern California.	In California, this gecko is found in the interior southern coastal region, generally west of the Peninsular Ranges and South of the Transverse Ranges, and north up the coast to Ventura County. It ranges beyond California south into Baja California.	Covered	**Known to occur.** The Biological Survey Area supports suitable coastal sage scrub with rock outcrops to support this species. Observed in 2008 by DWR staff.
Phrynosoma coronatum (blainvillii population)	coast (San Diego) horned lizard	SSC	Found in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat with loose, fine soils with a high sand fraction; and abundance of native ants.	It ranges from the Transverse Ranges southward to the Mexican border west of the deserts. The known elevation range of this species is from 32 – 6990 feet msl.	Covered	**Known to occur.** The Biological Survey Area supports habitat to support this species. This species is known to occur within the LPSRA and all over western Riverside County.
Aspidoscelis hyperythra *(=Cnemido-phorus hyperythrus)*	orange-throated whiptail	SSC	This subspecies is found within semi-arid brushy areas typically with loose soil and rocks, including washes, stream sides, rocky hillsides, and coastal chaparral. Habitat types include low elevational chaparral, non-native grassland, coastal sage scrub, juniper woodland and oak woodland. Associations include alluvial fan scrub and riparian areas.	Belding's orange-throated whiptail is uncommon to fairly common over much of its range in Orange, Riverside, and San Diego counties. Also occurs in southwestern San Bernardino County near Colton. They extend from near sea level to 3412 feet msl (northeast of Aguanga, Riverside County).	Covered	**Known to occur.** The Biological Survey Area contains suitable habitats. This species is known to occur within the LPSRA and throughout western Riverside County.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Aspidoscelis tigris stejnegeri *(=Cnemido-phorus tigris stejnegeri)*	coastal whiptail (coastal western whiptail)	ND	The coastal western whiptail is found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage such as deserts, chaparral and semiarid. Also found in woodland and riparian areas. The western whiptail can be found in open, often rocky areas with little vegetation or sunny microhabitats within shrub or grassland associations. The ground may be firm soil, sandy, or rocky.	This subspecies is found in coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County. Ranges south into Baja California.	Covered	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable soils and open, rocky areas with little vegetation or sunny microhabitats within shrub or grassland associations to support this species. This species is known to occur within the LPSRA and all over western Riverside County.
Anniella pulchra pulchra	silvery legless lizard	SSC	This species is common in several habitats. It is found primarily in areas with sandy or loose organic soil or where there is plenty of leaf litter. Usually associated with friable soils with some moisture content and some vegetative cover. They are often found under surface objects.	This California endemic ranges throughout California. It generally occurs west of the desert.	X	**Moderate potential to occur.** The Biological Survey Area contains habitat with leaf litter However this species is not known to occur within the LPSRA, but it is known to occur within the immediate region.
Charina trivirgata roseofusca	coastal rosy boa	ND	The coastal rosy boa inhabits arid and semi-arid shrublands, canyons, and other rocky areas. Appears to be common in riparian areas, but does not require permanent water. It is absent from grasslands. It appears to prefer moderate to dense vegetative cover with rocks. They have been found under rocks, in boulder piles, and along rock outcrops and vertical canyon walls.	The coastal rosy boa occurs in southwestern California to the coastal slopes of the San Gabriel and San Bernardino mountains, and across the Peninsular Ranges into the desert in San Diego County. They only occur west of the desert below approximately 3937 feet msl in elevation.	X	**Known to occur.** The Biological Survey Area contains suitable rocky scrub and riparian habitats to support this species. This species is known to occur within the LPSRA and throughout western Riverside County.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Crotalus ruber ruber	northern red-diamond rattlesnake	SSC	It is most commonly associated with heavy brush with large rocks or boulders. They need rodent burrows, cracks in rocks or surface cover objects.	The known range of northern red-diamond rattlesnake extends from Morongo Valley in San Bernardino County southward on both coastal and desert sides of the Peninsular Ranges to Baja California, Mexico. Its known elevational range extends from near sea level to about 5000 feet msl.	Covered	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable coastal sage scrub and rock habitats to support this species. This species is known to occur within the LPSRA and throughout western Riverside County.
Birds						
Pelacanus erythrorhynchos	American white pelican (nesting colony)	SSC	This species nest sat large freshwater and salt water lakes, usually on small islands or remote dikes. The nest-site must be flat or gently sloping, lacking shrubs or other obstructions that would impede taking flight, free of human disturbance, and usually with loose earth suitable for nest-mounds.	In California, they nest only at large lakes in the Klamath Basin. They are common spring and fall migrants at the Salton Sea, the Colorado River, Morro Bay, and San Diego Bay. Migrant flocks pass overhead almost any month, but mainly in spring and fall throughout the state, especially in southern California.	X	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable foraging lake habitat to support this species during the migration season. This species is known to occur within the LPSRA, but do not nest.
Phalacrocorax auritus	double-crested cormorant (rookery site)	WL	They require lakes, rivers, reservoirs, estuaries, or ocean for foraging. They require undisturbed nest-sites beside the water, on islands or the mainland. Double-crested cormorants nest in tall trees (live or dead), wide rock ledges on cliffs, or rugged slopes near (or in) the aquatic environments. The suitable nest-site must be within 5 - 10 miles of a dependable food supply.	A yearlong resident along the entire coast of California and on inland lakes. During August to May, it is fairly common to locally very common along the coast and in estuaries and salt ponds. Rookeries are extremely scarce away from the Salton Sea, the Colorado River, and the Channel Islands.	Covered (a)	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable foraging lake habitat to support this species. This species is known to occur within the LPSRA. They are not known to breed at the LPSRA.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Plegadis chihi	white-faced ibis (rookery site)	WL	Migrant and wintering white-faced ibis may be found foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries.	The white-faced ibis is an uncommon summer resident in sections of southern California. This species no longer breeds regularly anywhere in California except at a few local spots in Riverside County, the Salton Sea, the Central Valley and northeastern California.	Covered (a)	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable foraging lakeshore mudflat habitat to support this species. This species is known to occur within the LPSRA.
Pandion haliaetus	osprey (nesting)	WL	Strictly restricted to ocean shores, bays, freshwater lakes, rivers, large streams, reservoirs, and large waters supporting fish with surrounding or nearby forest habitats.	A common winter species in southern California. Within California, breeding populations reside in the Cascade and Sierra Mountain ranges and along the coast south to Marin County. An uncommon breeder along southern Colorado River. Wintering habitat is found along the California coast south of San Francisco.	Covered (a)	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable lake habitat. As a transient species and potential nesting bird, the osprey has been recorded at LPSRA.
Elanus leucurus	white-tailed kite (nesting)	Fully Protected	The white-tailed kite inhabits low elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, oak woodlands and riparian areas adjacent to open areas. Open grasslands, meadows, or marshes are used for foraging close to isolated, dense-topped trees for nesting and perching. Substantial groves of dense, broad-leafed deciduous trees are used for cover, nesting and roosting.	In California, the white-tailed kite is a common to uncommon, year-long resident in coastal and valley lowlands. It is found in virtually all lowlands of California west of the Sierra Nevada range and the southeast deserts. It is common in the Central Valley and along the entire California coast.	Covered (a)	**Known to occur.** The Biological Survey Area contains suitable foraging grassland habitat and suitable nesting riparian habitat to support this species. This species is known to occur within the LPSRA as a year long resident.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Circus cyaneus	northern harrier (nesting)	SSC	Frequents open fresh and saltwater wetlands, grasslands, pastures, upland prairies, dry uplands, croplands, shrub-steppe, meadows, desert sinks. It uses tall grasses and forbs in wetlands, for cover and it roosts on ground. It is mostly found in flat, open areas of tall, dense grasses, moist or dry shrubs, in the vicinity of marshes, rivers, ponds, or grassy valleys for nesting, cover, and feeding.	In California, it occurs from annual grassland up to lodgepole pine and alpine meadow habitats, as high as 10,000 feet msl. It breeds from sea level to 5700 feet msl in the Central Valley and Sierra Nevada.	Covered (breeding)	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable foraging and nesting grassland habitat to support this species. This species is known to occur within the LPSRA
Accipiter striatus	sharp-shinned hawk (nesting)	WL	Habitats include riparian deciduous, ponderosa pine, black oak, mixed conifer, and Jeffrey pine. The species uses dense near open areas. It roosts in intermediate to high-canopy forest. For nesting they occur in dense tree stands which are cool, moist, well shaded and usually near water. For hunting habitat, they often use openings at the edges of woodlands.	It is a fairly common migrant and winter resident throughout California, except in areas with deep snow.	Covered	**Known to occur.** The Biological Survey Area contains suitable breeding and foraging riparian habitat. This species is known to occur within the LPSRA. It is a common migrant and wintering species within western Riverside County.
Accipiter cooperii	Cooper's hawk (nesting)	WL	The Cooper's hawk breeds primarily in riparian areas and oak woodlands. It frequents landscapes where wooded areas occur in patches and groves. Dense stands with moderate crown-depths are usually used for nesting. They hunt in broken woodland and habitat edges. Within the range in California, it most frequently uses dense stands of live oak, riparian deciduous or other forest habitats near water. They are also found and can breed in suburban and urban settings.	A breeding resident throughout most of the wooded portion of the state. In southern California, the species is present year-round.	Covered (a)	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable breeding and foraging riparian habitat to support this species. This species is known to occur within the LPSRA.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Buteo regalis	ferruginous hawk (wintering)	WL	Within southern California, ferruginous hawks typically winter in open fields, grasslands, and agricultural areas. It roosts in open areas, usually in a lone tree or utility pole.	In the winter, ferruginous hawks can be found throughout California, with the exception of the extreme northeastern and northwestern regions. However, they are most common in the southern region of the state. It is migratory; it generally arrives in California in September and departs by mid-April. There are no breeding records from California.	Covered	**Known to occur (seasonally).** The Biological Survey Area contains suitable foraging and roosting habitat to support this species. It does not breed in southern California.
Aquila chrysaetos	golden eagle (nesting and wintering)	Fully Protected	Golden eagles occur locally in open country, especially in rolling foothills and mountainous regions. Within southern California, the species favors grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nesting is primarily restricted to rugged, mountainous country.	Within California the distribution, abundance, and seasonality of the golden eagle is described as: uncommon permanent resident and migrant throughout California, except center of Central Valley. It ranges from sea level up to 11,500 feet msl.	Covered	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable foraging open country grassland habitat to support this species. This species is known to occur within the LPSRA, but it is not known to breed there.
Charadrius montanus	mountain plover (wintering)	SSC	Within southern California, the largest numbers of birds occur in short grasslands and agricultural areas in the interior, such as freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. The birds spend about 75 percent of their time on plowed fields, but prefer heavily grazed annual grasslands or burned fields. They prefer short vegetation, bare ground, flat topography, and areas with burrowing rodents.	It does not nest in California. It occurs within the state only during the wintering season. Currently, mountain plovers winter in flocks in the Sacramento and San Joaquin Valleys, in central and south-coastal California, east locally to the southwestern deserts and south to central Mexico.	Covered	**Known to occur (seasonally).** The Biological Survey Area contains suitable foraging short grass habitats and flat topography to support this species.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Athene cunicularia	burrowing owl (burrow sites and some wintering sites)	SSC	They require large open expanses of sparsely vegetated areas on gently rolling or level terrain with an abundance of active small mammal burrows, most notably the California ground squirrel. As a critical habitat feature need, they require the use of rodent or other burrows for roosting and nesting cover. They may also use pipes, culverts, and nest boxes where burrows are scarce.	It is a year-long resident formerly common throughout the state. In California, burrowing owls are restricted to the central valley to San Diego.	Covered (c)	**Known to occur.** The Biological Survey Area contains suitable habitat and level terrain. No signs of species were observed during all surveys conducted by Psomas at Lake Perris SRA.
Asio otus	long-eared owl (nesting)	SSC	Breeding habitat generally consists of groves of oaks or riparian woodlands with a closed canopy. Hunting habitat consists of oak and sycamore woodlands. Appears to be more associated with forest edge habitat than open or forest habitat. During breeding, the species uses the hardwood deciduous forests and during the winter season.	Uncommon yearlong resident throughout the state except the Central Valley and southern California deserts where it is an uncommon winter visitor. It apparently makes only local movements in California, although some migration may occur. These may be seasonal movement westward from the Sierra Nevada foothills in fall.	X	**Known to occur (seasonally).** The Biological Survey Area contains suitable habitats to support this species. The species has not been reported recently to occur in western Riverside County.
Lanius ludovicianus	loggerhead shrike (nesting)	SSC	The loggerhead shrike prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting. It is known to forage over open ground within areas of short vegetation. Individuals like to perch on posts, utility lines and often use the edges of denser habitats.	A common resident and winter visitor in lowlands and foothills throughout California.	Covered	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains habitat to support this species. It occurs as a yearlong resident, in western Riverside County.
Eremophila alpestris actia	California horned lark	WL	A year-long resident within the state and within a variety of open habitats. Within southern California, California horned larks breed primarily in open fields, (short) grasslands, and rangelands. Grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities provide cover.	The species breeds and resides in the coastal region of California from Sonoma County southeast to the Mexican border.	Covered	**Known to occur.** The Biological Survey Area supports suitable habitat with sparse vegetation. This species is known to occur within the LPSRA. It occurs as a yearlong resident in western Riverside County.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Progne subis	purple martin (nesting)	SSC	Purple martins inhabit open forests, woodlands, and riparian areas with snags in the breeding season. The birds typically breed in tall sycamores, and other large trees. They are secondary cavity nesters and typically nest in old woodpecker holes usually near a body of water. It forages and nests in riparian areas, forest, and woodlands. Purple martins may be found virtually anywhere in aerial habitat during migration	It is an uncommon to rare, local summer resident in a variety of wooded, low-elevation habitats throughout the state. In the south, it is now only a rare and local breeder on the coast and in interior mountain ranges.	Covered (a)	**Low potential to occur.** The Biological Survey Area contains suitable nesting riparian habitat and foraging grassland habitat to support this species. This species is not known to occur within the LPSRA, but is known to occur in the immediate region.
Campylo-rhynchus brunneicapillus sandiegensis	San Diego cactus wren (coastal cactus wren)	SSC (San Diego and Orange counties)	An obligate, non-migratory resident of the coastal sage scrub plant community. It frequents desert succulent shrub, Joshua tree, and desert wash habitats and other arid terrain with thickets, patches, or tracts of larger, branching cacti, stiff-twigged, thorny shrubs, and small trees. It is closely associated with three species of cacti and occurs almost exclusively in thickets of cholla and prickly pear dominated stands of coastal sage scrub.	The current range of the San Diego cactus wren occurs in cismontane southern California from southern Ventura County, east through coastal Los Angeles County to southwestern San Bernardino County, and south through Orange County, western Riverside County to coastal San Diego County, California and extreme northwestern Baja California, Mexico. Found below 1500 feet msl in elevation.	Covered	**Known to occur.** The Biological Survey Area does not contain suitable cactus and desert habitat. However this bird is known to exist in the Bernasconi Hills.
Dendroica petechia brewsteri	yellow warbler (nesting)	SSC	Yellow warblers in southern California breed and forage in lowland and foothill riparian woodlands dominated by cottonwoods, sycamores, aspens, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland.	It usually arrives in California in April, and mostly is gone by October. Small numbers regularly overwinter in southern California lowlands. Breeding distribution includes several southern California mountain ranges and throughout most of San Diego County. Winters in Imperial and Colorado River valleys.	Covered (a)	**Known to occur (seasonally).** The Biological Survey Area contains suitable nesting and foraging riparian habitat to support this species. This species is known to occur within the LPSRA.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Icteria virens	yellow-breasted chat (nesting)	SSC	In southern California they are found in tall, dense, relatively wide riparian woodlands and thickets of willows with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds. Breeding habitat must be dense to provide shade and concealment.	In southern California, breeds locally on the coast and very locally inland. In migration, may be found in lower elevations of mountains in riparian habitat. It usually arrives in April and departs by late September for the wintering grounds in Mexico and Guatemala.	Covered (a)	**Moderate potential to occur.** The Biological Survey Area contains suitable nesting and foraging riparian habitat. This species is not known to breed within the LPSRA.
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	WL	This species uses grass-covered hillsides, coastal sage scrub, and chaparral and often occur near the edges of the denser scrub and chaparral associations. Optimal habitat consists of sparse, low brush or grass, hilly slopes preferably interspersed with boulders and outcrops. The species may occur on steep grassy slopes without shrubs if rock outcrops are present.	The current range and distribution of this subspecies is extremely restricted to a narrow belt of semiarid coastal sage scrub and sparse chaparral from Santa Barbara south to the northwestern corner of Baja California.	Covered	**Known to occur.** The Biological Survey Area contains suitable coastal sage scrub and rocky habitat. This species is known to occur within the LPSRA and throughout western Riverside County.
Amphispiza belli belli	Bell's sage sparrow (nesting)	WL	Bell's sage sparrow is a breeder in dry chaparral and coastal sage scrub along the coastal lowlands, inland valleys, and in the lower foothills of local mountains. In transmontane California, it occupies sagebrush, alkali desert scrub, desert scrub, and similar habitats. In cismontane California, it frequents chaparral dominated by chamise, and coastal scrub dominated by sage.	In summer, it is uncommon to common east of the Cascade Range and Sierra Nevada, in foothills bounding the Central Valley, and in the Transverse, Peninsular, and coastal ranges from Trinity County south to the Mexican border. It occurs only locally at montane elevations, mostly in southern California.	Covered	**Known to occur.** The Biological Survey Area contains suitable coastal sage scrub habitat. This species is known to occur throughout western Riverside County.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Agelaius tricolor	tricolored blackbird (nesting colony)	SSC	The tricolored blackbird breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs and forages in grassland and cropland habitats. Colonies require nearby water, a suitable nesting substrate, and open-range foraging habitat of natural grassland, woodland, or agricultural cropland.	Mostly a resident in California. It is common locally throughout the Central Valley and in coastal districts from Sonoma County south. It breeds locally west of the Cascade Range, Sierra Nevada, south to extreme southwest San Bernardino County, western Riverside County and western and southern San Diego County.	Covered (colony)(a)	**Known to occur.** The Biological Survey Area contains suitable nesting marsh habitat and suitable foraging grassland habitat. This species is known to breed within the LPSRA. This species is a year long resident in western Riverside County.
Mammals						
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	SSC	It inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities. It generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates. In western Riverside County, the San Diego pocket mouse also commonly is found in disturbed grassland and open sage scrub vegetation with sandy-loam to loam soils.	The northwestern San Diego pocket mouse occurs mainly in arid coastal and desert border areas in western San Diego County, in Riverside County southwest of Palm Springs, in San Bernardino County. Elevational range from sea level to 6000 feet.	Covered	**Known to occur.** Observed during the Los Angeles pocket mouse and SKR trapping surveys conducted by Psomas. The Biological Survey Area contains suitable grassland and coastal sage scrub habitat. This species is known to occur within the LPSRA.
Perognathus longimembris brevinasus	Los Angeles pocket mouse	SSC	This species probably inhabits open ground of fine, sandy soils and may utilize these soil types for burrowing. It may be restricted to lower elevation grassland and coastal sage scrub. It probably prefers sparsely vegetated habitats.	The geographic range of Los Angeles Pocket mice is restricted to lower elevation grasslands and coastal sage associations in the Los Angeles Basin, from approximately Burbank and San Fernando (Los Angles County) on the northwest to San Bernardino (San Bernardino County) on the northeast, and Cabazon, Hemet, and Aguanga (Riverside County) on the east and southeast.	Covered (c)	**Known to occur.** This species was not found during the focused LAPM surveys, however was observed during the SKR trapping surveys conducted by Psomas. The Biological Survey Area contains suitable grassland and coastal sage scrub habitat outside of the proposed project area.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Neotoma bryanti intermedia	Bryant's woodrat	SSC	Bryant's woodrat is found in a variety of shrub habitats primarily associated with rock outcroppings, boulders, sage scrub, cactus, or other areas of dense undergrowth. Bryant's woodrat commonly inhabit Joshua tree woodlands, pinyon-juniper woodlands, mixed chaparral, coastal sage scrub, and coastal desert habitats seaward of the coastal mountain ranges. Bryant's woodrat is often associated with coastal sage scrub communities, rocky outcroppings and boulder-covered hillsides in chaparral or oak woodlands, and if present large cactus patches, like the prickly pear cactus.	The subspecies of Bryant's woodrat occurs from Alameda County east of the San Francisco Bay in Central California south along both inner and outer Coast Ranges, the western foothill of southern Sierra Nevada, Traverse, and Peninsular Ranges, as well as coastal southern California into northwestern Baja California, at least as far as El Rosario.	Covered	**Known to occur.** Captured during SKR trapping surveys. The Biological Survey Area contains suitable coastal sage scrub habitat and rock outcrops. This species is known to occur within the Lake Perris SRA and throughout western Riverside County.
Neotoma lepida intermedia	San Diego desert woodrat	SSC	The San Diego desert woodrat is found in a variety of shrub and desert habitats primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth. The desert woodrat often is associated with large cactus patches, rocky outcroppings and boulder-covered hillsides. In rocky outcrops, they are known to construct dens in the cracks between boulders. Cactus patches are also a favorite den site.	The San Diego desert woodrat occurs in coastal southern California from San Luis Obispo County south into Baja California.	Covered	**Known to occur.** The Biological Survey Area contains suitable coastal sage scrub habitat and rock outcrops.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	SSC	The black-tailed jackrabbit is a habitat generalist occurring in open areas or semi-open country, typically in grasslands, agricultural fields or sparse coastal scrub. Jackrabbits typically are not found in high grass or dense brush.	San Diego black-tailed jackrabbit occurs only on the coastal side of the southern California mountains. This subspecies has been recorded from northern Baja California through San Diego, Orange, Los Angeles, Riverside, San Bernardino and Ventura Counties.	Covered	**Known to occur.** Observed during the field surveys by Psomas. The Biological Survey Area contains suitable sparse habitat. This species is known to occur within the LPSRA and throughout western Riverside County.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Macrotus californicus	California leaf-nosed bat	SSC	In California, they occupy the low-lying desert areas of southern California. Habitats occupied include desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis. Needs rocky, rugged terrain with mines or caves for roosting. Day roosts usually are in deep mine tunnels or caves, occasionally in buildings or bridges. The roost must provide shelter from heat and aridity. Night roosts may be in buildings, mines, bridges, rock shelters, or other sites with overhead protection. These bats often are found in large groups.	The California leaf-nosed bat is found from Riverside, Imperial, San Diego, and San Bernardino counties south to the Mexican border. Former populations have disappeared from coastal basins, from Los Angeles to San Diego. Desert populations have declined, but this species is only common along the Colorado River. California records are below 2000 feet.	X	**No potential to occur.** The Biological Survey Area does not contain suitable desert habitats to support this species. This species is not known to occur within the LPSRA or within the immediate region.
Eumops perotis californicus	western mastiff bat	SSC	Western mastiff bats are found in a variety of habitats, such as semi-arid to arid habitats but is geomorphically restricted, occurring primarily where there are significant rock features offering suitable roosting habitat. A cliff dwelling species, found under exfoliating rock slabs and rock crevices along cliffs. Western mastiff bats can also be found in similar crevices in large boulders and buildings. When roosting in rock crevices they require a sizable drop from their roost in order to achieve flight. Western mastiff bats prefer deep crevices that are at least 15 or 20 feet above the ground.	In California, they have been recorded from Butte County southward through the southern California coastal basins and the western portions of the southeastern desert region.	X	**Low potential to occur.** The Biological Survey Area contains suitable foraging habitats, but it does not contain suitable roosting rock habitats. This species is not known to occur within the LPSRA, but it is known from the immediate region.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Nyctinomops femorosaccus	pocketed free-tailed bat	SSC	Habitats used include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis. Pocketed Free-tailed bats are characteristically associated with rocky, desert areas with relatively high cliffs. They generally use crevices in rocks and caves as day-roosts, although they sometimes are found in man-made structures.	The pocketed free-tailed bat is found in Riverside, San Diego, and Imperial counties. This species is rare in California, but is more common in Mexico. May occur in Orange County.	X	**Low potential to occur.** The Biological Survey Area does not contain suitable foraging or roosting desert habitats to support this species. This species is not known to occur within the LPSRA, but it has been observed within the immediate region.
Lasiurus blossevillii	western red bat	SSC	Prefers edges or habitat mosaics that have trees for roosting and open areas for foraging. Any mix of grassland, shrubs, forests, riparian areas and cropland are suitable. This bat is primarily solitary. It roosts in the foliage of trees. The space beneath the roost must be free of obstacles to allow the bats to drop into flight.	The red bat is locally common in some areas of California, from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. The winter range includes western lowlands and coastal regions south of San Francisco Bay. There is migration between summer and winter ranges.	X	**Low potential to occur.** The Biological Survey Area does contain suitable foraging and roosting riparian habitat. However, this species is not known to occur within the LPSRA.
Lasiurus xanthinus	western yellow bat	ND	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. This species occurs year-round in California. Roosts in trees. Has been captured roosting under palm trees. Roosts and feeds in, and near, palm oases and riparian habitats. Forages over water and among trees.	The southwestern yellow bat is uncommon in California, known only in Los Angeles and San Bernardino counties south to the Mexican border. This species has been recorded below 2000 feet msl.	X	**Low potential to occur.** The Biological Survey Area does contain suitable habitat. However, this species is not known to occur within the LPSRA, but it is known from the immediate region.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Corynorhinus townsendii	Townsend's big-eared bat	SSC	Townsend's big-eared bats live in a variety of communities, including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and deserts, and high-elevation forests and meadows. Edge is preferred for foraging. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night and day. Maternity roosts are warm. Habitat for Townsend's big-eared bats must include appropriate roosting, maternity, and hibernacula sites free from disturbances by humans.	Townsend's big-eared bat is found throughout California, but the details of its distribution are not well known. This species may be found at any season throughout its range.	X	**Low potential to occur.** The Biological Survey Area does contain suitable foraging habitat, but not suitable roosting habitat. This species is not known to occur within the LPSRA.
Euderma maculatum	spotted bat	SSC	Little is known about the habitat requirements of this solitary species. It appears to occupy a variety of habitats from dry deserts and grasslands through mixed conifer forests. They forage in a wide variety of habitats and feed over water and along washes, fields, marshes, and openings in coniferous forests. They roost mostly in rock crevices, and occasionally in caves and buildings. Cliffs provide optimal roosting habitat.	The spotted bat is mostly found in foothills, mountains and desert regions of southern California. Elevational range extends from below sea level in California to above 10,000 feet msl in New Mexico.	X	**Low potential to occur.** The Biological Survey Area contains suitable foraging and roosting habitats. However this species is not known to occur within the LPSRA or within the immediate region of the LPSRA.
Antrozous pallidus	pallid bat	SSC	Uses a wide variety of habitats including deserts, grasslands, shrublands, woodlands, and forests form sea level up through mixed conifer forests. They are most common in deserts, preferring areas of open, dry habitats, with rocky areas for roosting and water nearby. Night roosts may be in more open sites, such as porches and open buildings	The pallid bat is a locally common species of low elevations in California. It occurs throughout California except for the high Sierra Nevada. Local data suggest that this species may be most common at elevations below 6000 feet msl on both coastal and desert sides.	X	**Low potential to occur.** The Biological Survey Area contains suitable foraging and roosting habitats to support this species; however this species is not known to occur within the LPSRA or within the immediate region of the LPSRA.

TABLE 3.3-7 (continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS

Scientific Name	Common Name	Status	General Habitat Description	General Distribution	Western Riverside County MSHCP	Potential for Occurrence
Puma concolor	mountain lion	Fully Protected	Mountain lions use many habitats, including desert scrub, chaparral, swamps, and forests. They avoid agricultural areas, flat shrubless desert, and other habitats that lack topographic or vegetative cover. It feeds primarily on mule deer and tends to be found where deer can be obtained. Mountain lions use rocky areas, cliffs, and ledges that provide cover within open woodlands and chaparral, as well as riparian areas that provide protective habitat connections for movement between fragmented core habitat.	Mountain lions are a widespread, uncommon permanent resident, ranging from sea level to alpine meadows. They are found in nearly all habitats in California that support mule deer populations, except xeric regions of the Mojave and Colorado deserts that do not support mule deer populations and they are excluded from croplands in the Central Valley.	Covered	**Known to occur.** The Biological Survey Area contains suitable habitats to support this species. The LPSRA supports mule deer populations to support the mountain lion. Though known to occur in the area impacts to this species are not expected due to being highly mobile and having a large home range.
Taxidea taxus	American badger	SSC	Badgers occur from alpine meadows to elevations as low as Death Valley. In California, badgers occupy a diversity of habitats. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated ground. Badgers are generally associated with dry, open, treeless regions, prairies, parklands, and cold desert areas. They seem to occur primarily in areas of low to moderate slope.	In California, badgers ranged throughout the state except for the humid coastal forests of northwestern California. No current data exist on the status of badger populations in California. The badger's altitudinal range extends from below sea level in Death Valley to over 12,000 feet msl.	X	**Known to occur.** The Biological Survey Area contains suitable open grassland habitats and ground squirrel populations to support this species.

TABLE 3.3-7 (Continued)
LISTED ENDANGERED, THREATENED, AND CANDIDATE SPECIES WITHIN THE VICINITY OF LAKE PERRIS.

ND = no designation

Federal Status
FE = federally endangered: any species, subspecies, or variety of plant or animal that is in danger of extinction throughout all or a significant portion of their range. Species become officially listed as endangered and receive explicit protection under the federal Endangered Species Act (ESA) upon publication of final rule for listing in the Federal Register.
FT = federally threatened: any species, subspecies, or variety of plant or animal that is considered likely to become endangered throughout all or a significant portion of its range within the foreseeable future. Once listed in the Federal Register, threatened species receive discretionary protection under the Endangered Species Act.
FC = federal candidate for listing: any species, subspecies, or variety of plant or animal that is being considered for listing as endangered or threatened, but for which a proposed regulation has not yet been published in the Federal Register. Federal candidate species may receive discretionary protection.

California State Status
SE = California state endangered: any species, subspecies, or variety of plant or animal that are in serious danger of becoming extinct throughout all, or a significant portion, of their range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
ST = California state threatened: any species, subspecies, or variety of plant or animal that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.
SSC = species of special concern status applies to animals not listed under the federal Endangered Species Act or the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist. The CDFG has designated certain vertebrate species as "Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long term viability. Not all "Species of Special Concern" have declined equally; some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a "Threatened" or "Endangered" species under the State and/or Federal Endangered Species Acts.
Fully protected: animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Fish and Game Code.
WL = CDFG watch list. This list includes taxa that are not on the current special concern list that (1) formerly were on the prioritized 1978 or unprioritized 1992 special concern lists and are not currently listed as state threatened and endangered, (2) have been removed (delisted) from either the state or federal threatened and endangered lists (and remain on neither), or (3) are currently designated as "fully protected" in California.

California Native Plant Society Status
CNPS 1B = California Native Plant Society List 1B plants are native California species, subspecies or varieties that are rare, threatened, or endangered in California and throughout its range.
CNPS 2 = California Native Plant Society List 2 plants are native California species, subspecies or varieties that are rare, threatened or endangered in California, but more common outside of the state.
CNPS 3 = California Native Plant Society List 3 plants are native California species, subspecies or varieties that more information is needed to assign them to one list or another or to reject them.

California Native Plant Society Threat Codes
0.1 means it is seriously endangered in California.
0.2 means it is fairly endangered in California.
0.3 means it is not very endangered in California.

Western Riverside County MSHCP
Covered: No further surveys are required.
Covered (a): Surveys may be required for these species as part of wetlands mapping (Section 6.1.2 of MSHCP).
Covered (b): Surveys may be required for these species within Narrow Endemic Plant Species survey area (Section 6.1.3 of MSHCP)
Covered (c): Surveys may be required for this species within locations shown on survey maps (Section 6.3.2 of MSHCP)
Covered (d): Surveys may be required for these species within Criteria Area as (Section 6.3.2 of MSHCP)
Covered (e): These Covered Species will be considered to be Covered Species Adequately Conserved when conservation requirements identified in species-specific conservation objectives have been met. Species specific conservation objectives for these species are presented in Section 9.0 of the MSHCP. Please refer to Table 9-3 of the MSHCP for specific conservation objectives that must be met for the 16 species prior to including them on the list of Covered Species Adequately Conserved.
Covered (f): These Covered Species will be considered to be Covered Species Adequately Conserved when a memorandum of Understanding is executive with the Forest Service that addresses management for these species on Forest Service Land. Please refer to Table 9-3 of the MSHCP.
X = Not covered by the MSHCP, but identified by the CNDDB and other literature.

SOURCES: Psomas, 2008

Listed Endangered, Threatened and Candidate Wildlife Species

One wildlife species, the least Bell's vireo, listed as endangered, pursuant to the federal and state Endangered Species Acts was observed within or adjacent to the proposed project site during the field surveys. No other wildlife species listed as threatened or candidate pursuant to the federal or state Endangered Species Acts were observed within or adjacent to the proposed project site during the field surveys. The Los Angeles pocket mouse was observed during field surveys conducted at the proposed project site below the dam.

As a result of the field surveys and the literature review, it was concluded that the following five listed wildlife species either have been recorded to occur, or have a moderate or high potential to occur within the study area.

- Bald Eagle
- Southwestern Willow Flycatcher
- Least Bell's Vireo
- Coastal California Gnatcatcher
- Stephens' Kangaroo Rat

Bald eagle

The bald eagle has been observed on Lake Perris mostly as a winter migrant. They have also been observed at Santa Ana River/Prado Basin, Lake Elsinore, Vail Lake, Lake Hemet, Lake Mathews, and Lake Skinner (RCIP, 2003). Bald eagles typically require large bodies of water or free flowing rivers containing fish, with adjacent snags or other perches. They generally nest in large trees with open branching. Bald eagles nest from February to August, with nests usually located near a permanent water source.

Southwestern willow flycatcher

This breeding season migrant is restricted to riparian woodlands along streams, rivers, wetlands and marshes with mature, dense stands of willows, cottonwoods, or smaller spring fed or boggy areas with willows or alders. Southwestern willow flycatchers typically arrive in southern California at the end of April and adults depart from the breeding territory in mid-August to early September. Riparian habitat provides both breeding and foraging habitat for the species. This subspecies is known to breed in only eight locations in Southern California, including the Santa Margarita and San Luis Rey rivers in San Diego County and the Santa Ynez River in Santa Barbara County (San Diego Natural History Museum, 1995). Southwestern willow flycatchers have been recorded in western Riverside County from the Prado Basin area eastward to the vicinity of Vail Lake (RCIP, 2003). A small number of occurrences have been recorded historically near Lake Perris but there have been no known territories on-site since 1990 (RCIP, 2003). Southwestern willow flycatchers were not observed during protocol surveys in 2007.

Least Bell's vireo

This migratory songbird requires riparian woodlands with a dense understory and stratified canopy. The least Bell's vireo is a spring and summer breeding migrant of southern California, arriving by end of March and migrating back to Mexico by end of August (RCIP, 2003). The second largest population in the U.S. occurs at the Prado Dam flood control basin and along Chino Creek in western Riverside County (RCIP, 2003). A minimum of two least Bell's vireo

breeding territories were located during 2005 and 2007 surveys in the riparian band on the northeast shore of Lake Perris near pictograph rock. Least Bell's vireos have also been observed in the riparian area below Lake Perris Dam in 2007 and within the emerging lakebed vegetation in 2009.

Coastal California gnatcatcher

The coastal California gnatcatcher is a resident species restricted to coastal sage scrub habitats generally below 750 feet elevation in coastal regions and below 1500 feet inland (Atwood and Boisinger, 1992). It ranges from Ventura County south to San Diego County and northern Baja California. It is less common in coastal sage scrub with a high percentage of tall shrubs such as laurel sumac, preferring habitat with more low growing vegetation. California gnatcatchers are found in sage scrub habitats throughout western Riverside County with high densities in the area between Lake Elsinore, Lake Skinner, and Temecula (RCIP, 2003). Protocol surveys conducted during 2007 and 2008 field surveys of the study area resulted in no observations of the coastal California gnatcatcher.

Stephens' kangaroo rat

The Stephens' kangaroo rat is a small burrowing rodent adapted for arid environments with long, strong hind legs, and short, relatively small front legs. The Stephens' kangaroo rat is found almost exclusively in open grasslands or sparse shrublands such as coastal sage scrub with cover of less than 50 percent. They prefer areas with buckwheat, chamise, brome grasses and filaree. They avoid areas with dense grass cover. As a fossorial (burrowing) animal, it typically is found in well drained, gravelly or sandy and sandy loam soils with a low clay content, and avoid rocky soils. However, there are exceptions where they can utilize the burrows of pocket gophers and California ground squirrels.

The Stephens' kangaroo rat is found in western Riverside County in patches from the Corona Hills to Anza Valley, in the Temecula area to Potrero Valley, and in the Badlands (RCIP, 2003). The San Jacinto Wildlife Area-Lake Perris SRA is a core reserve area for Stephens' kangaroo rat (RCIP, 2003). Stephens' kangaroo rat has been found in the grassland habitat east of Lake Perris and in portions of the grassland areas below the dam. Stephens' kangaroo rat trapping was conducted at Lake Perris by the Riverside County RCA as part of the Western Riverside County MSHCP monitoring program in 2006. There was one trapping grid below the dam, located at the northwest end of the dam. One Stephens' kangaroo rat was captured during the summer (August 15-17) 2006 trapping session and a second Stephens' kangaroo rat was captured during the fall (November 1-3) 2006 session. Stephens' kangaroo rats were PIT tagged to mark individual captures. Several other Stephens' kangaroo rats were captured in other locations around Lake Perris during the 2006 RCA trapping effort.

Protocol surveys were conducted in 2008 for SKR within the construction impact areas and no SKR were found. Some SKR were located below the dam in the grassland areas west of the northern portion of the dam similar to where they had been located in 2006. This area is not within the construction area for the proposed project. The 2008 survey results are included in the Biological Resource Evaluation included in Appendix C.

Non-Listed Special-Status Wildlife Species

Four non-listed special-status species wildlife species were observed within or adjacent to the proposed project site during the field surveys, these include:

- Coastal Western Whiptail
- Cooper's Hawk
- White-faced Ibis
- San Diego Black-tailed Jackrabbit

As a result of the field surveys and the literature review, it was concluded that the following twenty-one non-listed special-status wildlife species either have been recorded to occur, or have a moderate or high potential to occur on the proposed project site. Habitat requirement summaries and observations or probability for occurrence within the study area are shown in Table 3.3-7 and further detailed in the background biological resources report included in **Appendix C**, *Biological Resource Evaluation of the Lake Perris Dam Remediation Project*.

- Coast Horned Lizard
- Belding's Orange throated Whiptail
- Northern Red Diamond Rattlesnake
- White-faced Ibis
- White-tailed Kite
- Golden Eagle
- Mountain Plover
- Burrowing Owl
- Loggerhead Shrike
- California Horned Lark
- San Diego Cactus Wren
- Yellow-breasted Chat
- Southern California Rufous-crowned Sparrow
- Bell's Sage Sparrow
- Tricolored Blackbird
- Western Mastiff Bat
- Los Angeles Pocket Mouse
- Northwestern San Diego Pocket Mouse
- San Diego Desert Woodrat
- San Diego Banded Gecko
- Rosy Boa

3.3.6 Regulatory Framework

Federal Endangered Species Act

The USFWS administers the federal Endangered Species Act (FESA) that provides a process for listing species as either threatened or endangered, and methods of protecting listed species. Species are listed as either endangered or threatened under Section 4 of the FESA that defines as "endangered" any plant or animal species that is in danger of extinction throughout all or a significant portion of its range and "threatened" if a species is likely to become endangered in the foreseeable future. Section 9 of the FESA prohibits "take" of listed threatened or endangered species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Harm under the definition of "take" includes disturbance or loss of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the FESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

The Western Riverside County MSHCP serves as the vehicle through which parties may comply with FESA, CESA and the Natural Communities Conservation Plan (NCCP) Act in western Riverside County for the incidental take of federal and state-listed endangered and threatened

species. Under the Riverside County MSHCP, DWR is considered a "Participating Special Entity" and can apply for Take Authorization to the RCA by completing a detailed application containing a description of the proposed project, and an analysis of its potential impacts to Covered Species and their habitats and to the MSHCP Conservation Area. Take authorization for a "Participating Special Entity" can then be granted by the MSHCP RCA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that causes nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend would be in violation of the MBTA.

Federal Clean Water Act

The Corps regulates the discharge of dredged or fill material into waters of the U.S. including wetlands pursuant to Section 404 of the Clean Water Act. The Corps has permitting authority permits for the discharge of dredged and/or fill material into waters of the United States. As discussed above, the Corps will continue to assert jurisdiction over traditional navigable waters (TNWs) and all wetlands adjacent to TNWs. While the Corps has not completed a formal traditional navigable waters (TNW) determination for Lake Perris, the Corps has confirmed it has been regulating dredge and fill activities at Lake Perris pursuant to Section 404 of the Clean Water Act and an applicant can concede jurisdiction under the preliminary jurisdictional determination option in the latest Rapanos Guidance memorandum. The Corps typically asserts regulatory jurisdiction over a water body that is not a TNW if that water body is “relatively permanent” (i.e., contains water year-round, or at least “seasonally,” and also asserts jurisdiction over wetlands adjacent to such water bodies if the wetlands “directly abut” the water body (i.e., if the wetlands are not separated from the water body by an upland feature such as a berm, dike, or road).

The assumption of Corps regulatory for this project is based on the relatively permanent presence of water, the recreational boating use of the lake (e.g. navigability), and the presumption of commercial purpose relating to navigation. The lake would also likely meet the interstate commerce nexus commonly applied to delineate isolated waters. The limits of Corps jurisdiction on Lake Perris are presumed to be the 1588 foot water surface level of the pre-drawdown lake level representing the Ordinary High Water Mark (OHWM). The lateral extent of Corps jurisdiction extends to the furthest limits of wetland habitat adjacent to the open water and that meets the three-parameter definition of a jurisdictional wetland. This again, is presumed to be the furthest extent of the willow riparian habitat along the northeastern portion of the lake, as well as willow riparian habitat occurring below the dam.

California Endangered Species Act

The CDFG administers the California Endangered Species Act (CESA). The State of California considers an endangered species one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. And a rare plant species is one present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are protected against take, which under the CESA is restricted to direct killing or harm of individual animals and does not apply to the loss of habitat as it does under FESA.

Fish and Game Code of California

All birds, and raptors specifically, and their nests, eggs and parts thereof are protected under Sections 3503 3503.5 of the Fish and Game Code of California. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) is considered a violation of this code. Additionally Section 3513 prohibits the take or possession of any migratory non-game bird listed by the MBTA.

CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife resources under Sections 1600-1603 of the Fish and Game Code of California. The CDFG issues Streambed Alteration Agreements for the alteration of any of these areas. It is not legal to alter the bed or bank of a stream or lake or their natural water flow without a CDFG Streambed Alteration Agreement.

Non-Listed Species Management and Conservation Concerns

Species of Special Concern is an informal designation used by CDFG for some declining wildlife species that are not proposed for listing as threatened or endangered. This designation does not provide legal protection, but signifies that these species are recognized as declining by CDFG.

The CNPS has developed an inventory of California's sensitive plant species. This inventory summarizes information on the distribution, rarity, and endangerment of California's vascular plants. The inventory is divided into four lists based on the rarity of the species. In addition the CNPS provides an inventory of plant communities that are considered natural communities of special concern by the state and federal resource agencies, academic institutions, and various conservation groups. The determination of the level of significance of impacts on plant species and natural communities is based on the number and size of remaining occurrences as well as recognized threats.

Natural communities of special concern are those that support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Natural communities of special concern are not afforded legal protection unless they are

designated critical habitat for federally listed threatened or endangered species, support formally listed species, or are jurisdictional wetland habitats.

Western Riverside County Multi-Species Habitat Conservation Plan

The proposed project site lies within the boundary of the Western Riverside County MSHCP. The MSHCP involves the assembly and management of a 500,000-acre Conservation Area for the conservation of natural habitats and their constituent wildlife populations. The approval of the MSHCP and the Implementing Agreement (IA) by the USFWS and CDFG allows signatories of the IA to issue "take" authorizations for the 146 species covered by the MSHCP (termed "covered species"), including state and federally listed species as well as other identified sensitive species. The "take" authorization includes impacts to the habitats of the covered species. The signatories considered "permittees" include Riverside County, 14 cities in western Riverside County, Caltrans, and California Department of Parks and Recreation (State Parks).

The MSHCP allows the permittees to "take" (permit the loss of) the plant and animal species covered by the MSHCP through their local land use planning and development review processes. DWR is not a permittee under the MSHCP, however, any regional public facility provider such as a utility or a public district or agency, including a school, water or irrigation district, that operates and/or owns land within the MSHCP Plan Area and that applies for Take Authorization is defined as a Participating Special Entity. DWR as a Participating Special Entity may request Take Authorization for its activities pursuant to the permits. The MSHCP is designed to provide compliance with federal and state endangered species requirements.

The proposed project site lies within the Lake Perris SRA, which is designated a Public/Quasi-Public Land by the MSHCP. The Recreation Area is under the jurisdiction of State Parks. Although State Parks does not own all of the land, it does maintain, manage, and control access and the uses within the boundaries of the project area. Maintenance of existing public facilities in Public/Quasi-Public Lands is permitted by the MSHCP. The maintenance must occur within existing disturbance areas and without any changes in facility operation that would affect covered species.

If Public/Quasi-Public Lands would be used in a way that alters the land use so that the land would not contribute to covered species conservation, then replacement land must be acquired or otherwise permanently protected. The replacement must be at a minimum ratio of 1:1 replacement taking into account direct and indirect effects of Public/Quasi-Public Lands in one location with Public/Quasi-Public Lands in another location. The replacement land must be biologically equivalent or superior to the land that would be affected. An analysis describing the equivalent conservation must be approved by the USFWS and CDFG. The analysis must compare the effects and benefits of the proposed project, including specific mitigation and compensation for lost conservation values, with the conditions prior to development. The analysis must consider specific project design features, including project sighting and design guidelines, in the MSHCP and BMPs in the IA.

Stephens' Kangaroo Rat Habitat Conservation Plan

The proposed Project is located within the boundary of the adopted HCP for the endangered Stephens' kangaroo rat (SKR) implemented by the Riverside County Habitat Conservation Agency (RCHCA). The SKR HCP mitigates impacts from development on the SKR by establishing a network of preserves and a system for managing and monitoring them. Through implementation of the SKR HCP, more than $45 million has been dedicated to the establishment and management of a system of regional preserves designed to ensure the persistence of SKR in the plan area. This effort has resulted in the permanent conservation of approximately 50 percent of the SKR occupied habitat remaining in the HCP area. Through direct funding and in-kind contributions, SKR habitat in the regional reserve system is managed to ensure its continuing ability to support the species.

3.3.7 Impacts and Mitigation Measures

Significance Criteria

To determine the level of significance of an identified impact, the criteria outlined in the *CEQA Guidelines* were used. The following is a discussion of the approaches to, and definitions of, significance of impacts to biological resources drawn from several distinct guidelines sections.

CEQA Guidelines Section 15065 directs lead agencies to find that a project may have a significant effect on the environment if it has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory. *CEQA Guidelines* Section 15206 further specifies that a project shall be deemed to be of statewide, regional, or area-wide significance if it would substantially affect sensitive wildlife habitats including, but not limited to, riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species as defined by the Fish and Game Code Section 903. *CEQA Guidelines* (Section 15380) provide that a plant or animal species, even if not on one of the official lists, may be treated as "rare or endangered" if, for example, it is likely to become endangered in the foreseeable future. Additional criteria to assess significant impacts to biological resources due to the proposed project are specified in *CEQA Guidelines* Section 15382 (Significant Effect on the Environment) "*…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance*."

Appendix G of the *CEQA Guidelines* (as revised) indicates that a project would have a significant effect on the environment if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Fundamentally conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Fundamentally conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

CEQA Guidelines specify that there must be a significant connection between the mitigation measure and a "legitimate governmental interest (*CEQA Guidelines 15126.4*)." The mitigation measure must also be "roughly proportional" to the impact for which it is mitigating. Specifically, *CEQA Guidelines* 15126.4(a)(4):

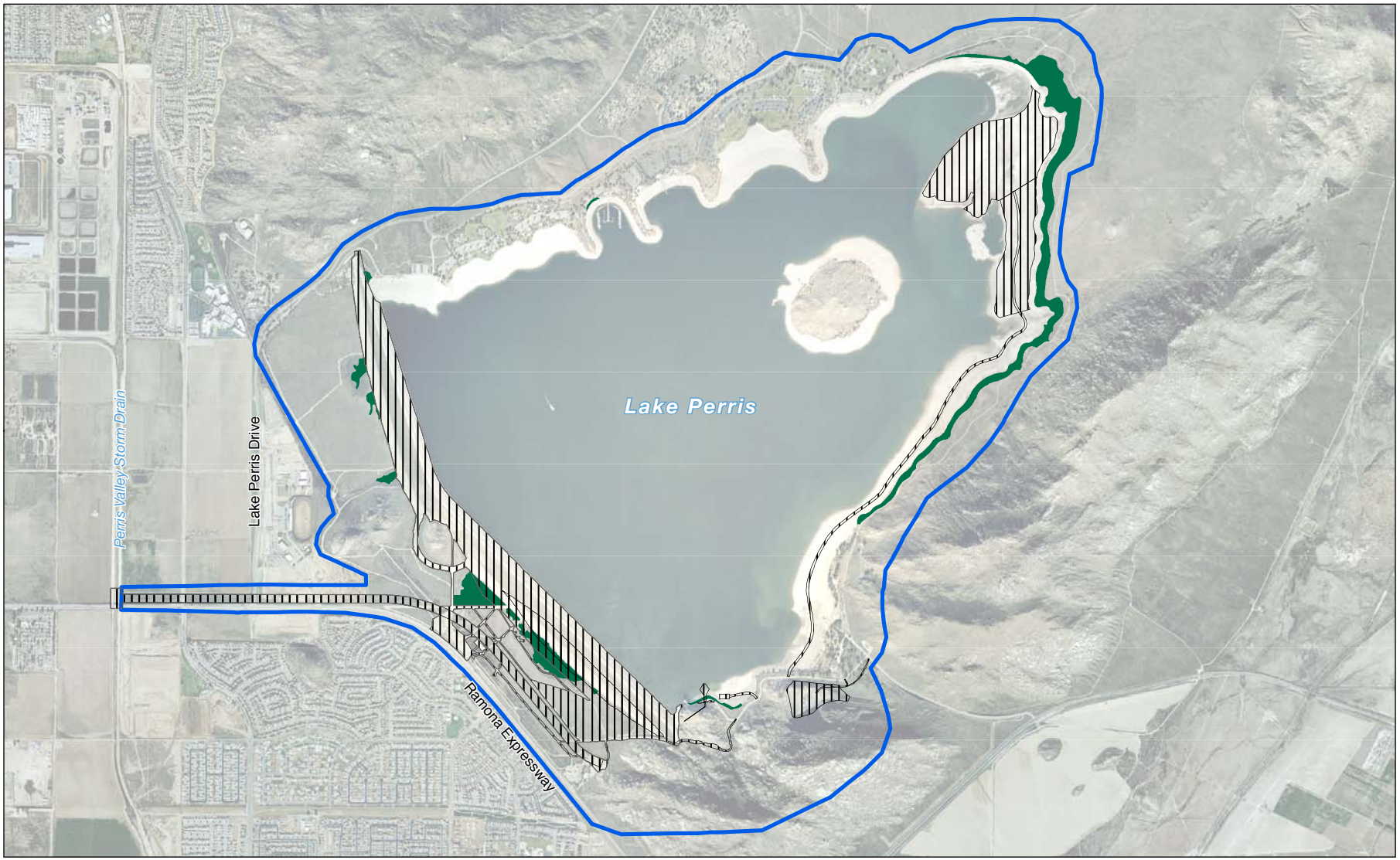
- There must be an essential nexus (i.e. connection) between the mitigation measure and a legitimate governmental interest. *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987); and
- The mitigation measure must be "roughly proportional" to the impacts of the project. *Dolan v. City of Tigard*, 512 U.S. 374 (1994). Where the mitigation measure is an *ad hoc* exaction, it must be "roughly proportional" to the impacts of the project. *Ehrlich v. City of Culver City* (1996) 12 Cal.4th 854.

Riparian Vegetation

Impact 3.3-1: The lowering of the lake level has resulted in a temporary impact to the pre-drawdown lake shore habitat dominated by riparian plant species. In addition, construction of the stability berm will permanently remove a portion of the similar habitat type found below the dam.

Temporary Effects

Prior to the drawdown, a band of mature southern willow woodland and scrub (approximately 48 acres) was well established along the eastern edge of the lake (see **Figure 3.3-6**). When the lake was drawn down, this vegetation was isolated from its water source. To avoid the destruction of this habitat, DWR installed an irrigation system that conveys lake water through a pipeline and sprinkler system along the entire northeast shore of the lake. This irrigation system is designed to maintain the vegetation until the lake level is restored. However, some areas have shown signs of water stress or mortality resulting in reduced cover. DWR has modified irrigation methods in order to maintain and increase survivability within the riparian area and continues to work on improving the irrigation system. It is expected that the riparian area will recover once the water is returned to its original level.



Southern Willow Woodland and Scrub
Project Impact Area

0 3,500
Feet

SOURCE: GlobeXplorer, 2007; DWR, 2007; ESA, 2009.

DWR - Perris Dam Remediation Program . 206008.02

Figure 3.3-6
Riparian Areas

An assessment of the approximately 68 acres of existing riparian habitat composed of southern willow woodland and scrub along the northeastern portion of the lake was conducted by ESA in March 2009 (see Appendix C). The assessment divided the existing northeastern riparian habitat into patches categorized from 1-6 based on the survivorship value of the patch (1 being a patch with low survivorship, and 6 being the highest survivorship). Using this method, described in detail in Appendix C, the assessment concludes that approximately 23.8 acres (48.3 percent) of the original 48 acres of habitat value had been lost as of March 2009. It is assumed that this is a temporary loss that will be restored once the lake level is brought back to its original elevation.

The drawdown of Lake Perris in 2005 has also resulted in emerging vegetation of various types within the exposed lakebed and along the new lake shoreline. These include heliotrope scrub/sandbar, freshwater marsh, mule fat scrub, southern willow woodland and scrub, and ruderal areas (see Figure 3.3-2). These habitats became established on the exposed lakebed following the lowering of the lake level, and were not part of the original baseline for evaluating project impacts. DWR and State Parks in coordination with CDFG and USFWS staff have allowed this emerging vegetation to thrive rather than removing it through regular maintenance in order to provide interim habitat value.

A visual assessment of the emerging southern willow scrub habitat along the new shoreline was conducted in March 2009. Two separate areas of high quality southern willow scrub habitat were identified along the new shoreline, totaling approximately 11 acres. During the March 2009 survey, least Bell's vireo were observed utilizing this emerging willow shoreline vegetation (Appendix C).

The emerging willow scrub shoreline vegetation is providing some level of value to offset the loss of the mature, pre-existing riparian habitat along the northeastern side of the lake. Due to its proximity to the affected riparian vegetation, and quality of habitat, the new lake shore's emerging vegetation has provided and will continue to provide a temporary location for wildlife species to inhabit during the drawdown period. However, during construction, the emerging vegetation within the construction zone will be removed. Furthermore, once the lake is returned to its original water level, the emerging vegetation will be submerged. In coordination with CDFG and USFWS, DWR will maintain as much high-quality willow scrub habitat as possible around the new lakeshore outside of the construction zone throughout the construction period. This will provide a band of willow habitat along the lakeshore parallel to the haul road through the construction period. Mitigation Measure 3.3-1a will ensure that DWR coordinate with CDFG and USFWS to manage these areas. The existing riparian habitat surrounding the lake is expected to return to its original quality within a few years of the raised lake elevation, resulting in no permanent loss of habitat. Mitigation Measure 3.3-1b commits DWR to implementing a habitat restoration plan to ensure that the habitat values return to the original condition or are enhanced.

Permanent Effects

Construction of the stability berm would encroach onto a portion of the mature riparian habitat that exists below the dam (see Figure 3.3-6). This southern willow woodland and scrub habitat has grown up as a result of seepage from the dam. The proposed project would permanently

remove 11 acres of this habitat. Mitigation Measure 3.3-1c would provide compensation for the lost riparian habitat. Compensation requirements would be consistent with the MSHCP and would require concurrence from CDFG and USFWS.

Mitigation Measures

Mitigation Measure 3.3-1a: DWR shall coordinate with CDFG and USFWS to minimize clearing of vegetation on the exposed lakebed outside of the construction zone while ensuring that sensitive species utilizing the habitat would not be impacted by construction activities.

Mitigation Measure 3.3-1b: DWR shall prepare and implement a southern willow woodland and scrub restoration plan for temporal impacts to the northeastern riparian habitat surrounding the lake that may include the following measures:

- Removal of dead trees within areas of low survivorship, leaving some in place as needed for snags, and re-contouring of select areas into planting basins of various sizes,
- Obtain cuttings from the emerging post-draw-down habitat to be installed within the established planting basins,
- Development of a maintenance and monitoring plan to ensure successful implementation and establishment until one year after water levels are returned to pre-draw-down conditions.

Mitigation Measure 3.3-1c: DWR shall provide compensation lands at a 1:1 ratio for permanently impacted habitat including southern willow woodland. DWR shall prepare an equivalency analysis for the compensation land.

Significance after Mitigation: Less than Significant.

Special-Status Plant Species

Impact 3.3-2: Implementation of the proposed project could result in the loss of endangered, threatened, candidate, or rare plant species listed under the federal or state Endangered Species Acts, or plants designated as rare by the CNPS.

No plants listed as endangered, threatened, candidate or state rare pursuant to the federal or state Endangered Species Acts, and no plants listed as rare by the CNPS, were observed during the field surveys and none are known to occur within the proposed project site. As a result of the field surveys and the literature review, it was concluded that no listed plant species have more than a low potential to exist on or adjacent to the proposed project site due to lack of suitable habitats, soils and other factors such as known distribution and elevation ranges (see Table 3.3-7). Therefore no direct or indirect project impacts to listed, endangered, threatened, candidate or state rare plant species are anticipated as a result of implementation of the proposed project.

Significance: Less than Significant.

Special-Status Wildlife Species and Habitat

Impact 3.3-3: Implementation of the proposed project would result in permanent and temporal loss of southern willow woodland and scrub habitat which provides nesting habitat for the least Bell's vireo.

Least Bell's vireo is a federal and state-listed endangered species. This migratory songbird is generally found in riparian woodlands with a dense understory. It is a spring and summer migratory breeder in southern California. Two breeding territories of the least Bell's vireo have been found in the riparian band of southern willow woodland and scrub bordering the northeastern shore of Lake Perris. One least Bell's vireo territory has also been observed in the southern willow woodland and scrub habitat below Perris Dam during field surveys. In addition, least Bell's vireo were also observed utilizing the emerging vegetation at the new shoreline. Impacts (both temporary and permanent) to southern willow woodland and scrub present on-site would result in the loss of habitat for the least Bell's vireo.

As discussed in Impact 3.3-1, the drawdown has reduced the acreage of high quality habitat used by the least Bell's vireo on the northeastern shore of Lake Perris. To some extent these impacts have been lessened by emergent riparian vegetation that has provided interim vireo habitat within the lakebed during the drawdown period. Mitigation Measure 3.3-1a, 3.3-1b and 3.3-3a would reduce impacts to the least Bell's vireo resulting from the temporary loss of riparian vegetation along the northeastern portion of the lake. Mitigation Measure 3.3-3b will encourage removal of habitat during non-nesting season. Mitigation Measure 3.3-1c would compensate off-site for permanent impacts to vireo habitat below the dam.

The permanent reduction of habitat used by the least Bell's vireo below Perris Dam where 11 acres of southern willow woodland and scrub would be removed for the construction of the stability berm is considered a potentially significant impact that could be considered "take" under FESA.

The Western Riverside County MSHCP serves as the vehicle through which parties may comply with FESA, CESA and the NCCP Act in western Riverside County for the incidental take of federal and state-listed endangered and threatened species. Under the Riverside County MSHCP, DWR is considered a "Participating Special Entity" and can apply for Take Authorization to the RCA by completing a detailed application containing a description of the proposed project, and an analysis of its potential impacts to Covered Species and their habitats and to the MSHCP Conservation Area. Take authorization for a "Participating Special Entity" can then be granted by the RCA.

Fundamentally, the MSHCP has been established to avoid jeopardizing the continued existence of listed or proposed for listing endangered or threatened species. In issuing take authorization within the MSHCP the USFWS and CDFG have required that impacts are avoided and minimized

to the maximum extent feasible. For unavoidable impacts, compensation would be required to offset the temporary and permanent loss of habitat functions and values.

In order to minimize significant impacts on the least Bell's vireo, and to ensure compliance with FESA, CESA and the MSHCP, the following mitigation measures shall be implemented. However, due to the duration of the drawdown and the constant disruption to the least Bell's vireo habitat during the two year construction period, impacts to the least Bell's vireo would be considered significant and unavoidable.

Mitigation Measures

Mitigation Measure 3.3-3a: DWR shall modify the watering regimen for the band of southern willow woodland and scrub located on the eastern lakeshore pre-drawdown edge to include a periodic flooding schedule or some other means to sustain the pre-drawdown quality and extent of riparian habitat. Maintaining the pre-drawdown quality and extent of the riparian band through the project construction period would reduce temporary impacts to least Bell's vireo habitat impacted by the temporary lake drawdown. The regimen would be discontinued upon the refilling of the lake to its normal operating elevation of 1588 feet.

Mitigation Measure 3.3-3b: DWR shall conduct the following measures:

- Vegetation clearing needed to accommodate construction activities shall occur during the non-nesting season where feasible.
- For habitat removal conducted during the vireo nesting season, DWR shall have a qualified biologist conduct a pre-construction nesting season protocol survey for the least Bell's vireo within the project area to determine and map the location and extent of nesting least Bell's vireo occurrence(s).
- DWR shall avoid direct impacts on nesting least Bell's vireos located within the construction right of way. This could be accomplished by establishing the construction right of way and removal of plant material outside of the typical breeding season.
- If construction and vegetation removal is proposed for the vireo nesting period then active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone shall be established as approved by the USFWS and CDFG. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

Implement **Mitigation Measures 3.3-1a through 3.3-1c**

Significance after Mitigation: Significant and Unavoidable.

Impact 3.3-4: Implementation of the proposed project would result in the permanent and temporary loss of non-native annual grassland habitat presumed to support the federally listed endangered Stephens' kangaroo rat.

The Stephens' kangaroo rat is a ground-dwelling rodent found almost exclusively in open grasslands or sparse shrub habitats such as coastal sage scrub. This species has been previously documented present in the Lake Perris SRA east of the lake and on the north end below the dam outside the construction footprint. Trapping for SKR conducted in 2008 found no SKR in the project impact area (Appendix C). While non-native grassland (47 acres) would be impacted by implementation of the project staging area, stability berm and emergency outlet extension, these areas do not support SKR populations based on the 2008 trapping results. The construction of an open channel emergency outlet extension would result in permanently impacted grassland within the SKR HCP fee area. The remaining non-native grassland area would be used for staging purposes and would be restored following construction. Additional non-native grassland habitat would be restored following construction of the underground emergency outlet extension alternative.

Refer to Impact 3.3-11 for a discussion on project impacts related to the SKR HCP.

Mitigation Measures

Mitigation Measure 3.3-4: DWR shall implement the following measures:

- DWR shall have a qualified biologist with a Stephens' kangaroo rat handling permit, conduct pre-construction surveys for the Stephens' kangaroo rat within the grassland habitat to determine and map the location and extent of Stephens' kangaroo rat occurrence(s) within the project impact area. Confirmed Stephens' kangaroo rat precincts shall be avoided with the establishment of a non-disturbance buffer zone approved by the USFWS and CDFG. DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the project that also would avoid and minimize impacts on the Stephens' kangaroo rat.
- Where avoidance of confirmed Stephens' kangaroo rat precincts is infeasible and unavoidable, and if approved by the RCA, DWR shall have qualified biologists permitted or otherwise approved by the USFWS conduct a pre-construction Stephens' kangaroo rat trapping and relocation effort to minimize take of the Stephens' kangaroo rat during construction.
- DWR shall install a silt fence or some other impermeable barrier to Stephens' kangaroo rat to exclude Stephens' kangaroo rat from entering the active work areas.

Significance after Mitigation: Less than Significant.

Impact 3.3-5: Implementation of the proposed project would result in temporary impacts to migratory avian species due to temporary loss of southern willow woodland habitat and due to disturbance of construction activities.

Seasonal and sporadic migrant avian species stopping at Lake Perris SRA could be affected by the reduced quality of the existing riparian habitat along the northeast shore of the lake (as described in Impact 3.3-1), implementation of Mitigation Measure 3.3-1a through 3.3-1c, and 3.3-a would reduce this impact to a less than significant level. The disturbance caused by construction activities could also impact these migrant avian species. During the construction period, some migratory species may avoid the SRA.

Construction activities would increase the level of disturbance and presence of humans and large machines in open space areas of the park over a period of two years. This disturbance would significantly alter the ambience of the park, resulting in the potential for wildlife to move from the vicinity of the construction to more remote areas of the park. Human activity is common in the proposed construction zones, but the level of activity would increase substantially. Following construction, wildlife would likely return to the vicinity of the eastern lake shore.

Blasting occurring within the quarry, at the proposed new outlet tower, and along the haul road over the Bernasconi Hills could disrupt nesting birds and local wildlife. Sudden irregularly timed percussive noise events of 110 dBA could startle wildlife and could result in flight response. Nesting birds could leave the nests which could affect survival of the brood. The startling could stress wildlife in general, resulting in lower productivity or flight from the area. Blasting could occur irregularly for a period of two years. Limiting blasting to non-nesting periods would not be feasible. Impacts of noise to the environment are discussed in Section 3.9. Mitigation measures identified in the noise impact section (Section 3.9) require that noise barriers be installed for blasting activities. This would reduce the noise levels, but not eliminate the startle factor entirely. The potential impact to birds and wildlife from blasting noise would be considered a significant and unavoidable impact of the project.

Mitigation Measures

> **Mitigation Measure 3.3-5a:** DWR shall have a qualified biologist conduct a pre-construction spring/summer active season reconnaissance survey for nesting/roosting migratory bird species, and other nesting birds within 150-feet of the construction limits of each project element to determine and map the location and extent of special-status species occurrence(s) that could be affected by the project.
>
> **Mitigation Measure 3.3-5b:** DWR shall avoid direct impacts on any nesting birds located within the limits of construction. This could be accomplished by establishing the construction right of way and removal of plant material outside of the typical breeding season (February 1 through August 31).
>
> **Mitigation Measure 3.3-5c:** If construction and vegetation removal is proposed for the bird nesting period February 1 through August 31, then active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and in consultation with the USFWS and CDFG. Nest sites shall

be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

Implement **Mitigation Measure 3.3-1a through 3.3-1c, and 3.3-3a**

Significance: Blasting could disrupt nesting migratory birds in the area resulting in a significant and unavoidable temporal impact of the project.

Impact 3.3-6: Implementation of the proposed project would result in the permanent and temporary loss of Riversidean sage scrub, southern willow woodland and scrub, non-native grassland and other habitats which may support non-avian ground dwelling special-status species such as the northern red diamond rattlesnake, coastal western whiptail, San Diego pocket mouse, the Los Angeles pocket mouse, San Diego black-tailed jackrabbit, American badger and other special-status ground dwelling non-avian wildlife species.

The proposed project would result in both temporary and permanent impacts to a number of habitats around the edge of Lake Perris and below Perris Dam. Permanent impacts to Riversidean sage scrub, non-native grasslands, southern willow woodland and scrub, and coyote brush scrub would result from the construction of the stability berm below the dam, the emergency outlet extension and portions of the haul road through the Bernasconi Hills (**Table 3.3-8** and Figure 3.3-6).

The northern red diamond rattlesnake, coastal western whiptail and San Diego black-tailed jackrabbit were observed on or adjacent to the project site during field surveys. Seven other sensitive ground dwelling wildlife species were found to have moderate to high potential to occur on the project site including the coast horned lizard, Belding's orange throated whiptail, Los Angeles pocket mouse, northwestern San Diego pocket mouse, San Diego desert woodrat, San Diego banded gecko and the rosy boa. Both temporary and permanent impacts on Riversidean sage scrub, non-native grasslands, southern willow woodland and scrub and other plant communities present on-site would result in the loss of habitat for these species to the extent they occur within the project site. Furthermore, project implementation could result in mortality to individuals should they occur within the active project areas.

Trapping surveys conducted along the southeastern portion of the lake in 2007 found no Los Angeles pocket mice. However several Los Angeles pocket mice were captured during the 2008 Stephens' kangaroo rat protocol surveys conducted below the dam. Other special-status species captured during the surveys included one Bryant's woodrat and several San Diego pocket mice (see Appendix C for detailed information regarding each survey). Mitigation Measures 3.3-6a through 3.3-6e would reduce any impacts to these special-status species to a less than significant level.

TABLE 3.3-8
PROJECT IMPACTS TO LOCAL HABITATS

	Approximate Permanent Impacted Acres		Approximate Temporary Impacted Acres	
Habitat Type	**Underground Channel Alternative**	**Open Channel Alternative**	**Underground Channel Alternative**	**Open Channel Alternative**
southern willow scrub	11	11	24	24
non-native grasslands	7	28	40	19
Riversidian sage scrub	9	17	8	1
Coyote brush scrub	1	1	0	0

Special-status species that are not otherwise listed within the Endangered Species Act may not be provided legal protection. Significant impacts to non-listed special-status species would occur if a substantial modification to habitat supporting the species occurred. In order to reduce potentially significant impacts to non-avian ground dwelling special-status species to a less than significant level, the following mitigation measures should be implemented.

Mitigation Measures

Mitigation Measure 3.3-6a: DWR shall have a qualified biologist conduct a pre-construction field reconnaissance survey for non-listed special-status ground-dwelling species within the construction right-of-way.

Mitigation Measure 3.3-6b: DWR shall avoid and minimize impacts on documented locations of special-status ground dwelling species to the extent feasible and practicable by reducing the construction right-of-way through areas of occurrences to either avoid the occurrence or reduce impacts to the minimum necessary to complete the project.

Mitigation Measure 3.3-6c: DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the project that also would avoid and minimize impacts on special-status ground dwelling wildlife species.

Mitigation Measure 3.3-6d: DWR shall install a silt fence or some other impermeable barrier to exclude small wildlife species from entering the active work areas. Exclusion fencing can be limited to areas of documented occurrences of special-status wildlife as determined during pre-construction surveys.

Mitigation Measure 3.3-6e: DWR shall have a qualified biologist conduct pre-construction and construction capture, salvage, and relocation efforts to remove special-status ground dwelling wildlife species, and other common species to the extent feasible, out of harms way to avoid and minimize impacts on these species.

Significance after Mitigation: Less than Significant.

Impact 3.3-7: Implementation of the proposed project would result in permanent and temporary loss of Riversidean sage scrub, southern willow woodland and scrub, and other habitats which may support the formally listed endangered coastal California gnatcatcher, as well as a number of special-status avian species including the burrowing owl, golden eagle, Cooper's hawk, white-faced ibis and other special-status avian and bat species.

The proposed project would result in both temporary and permanent impacts to a number of habitats around the edge of Lake Perris and below Perris Dam. A combined total of 47 acres of temporary and permanent impacts to non-native grassland would result from the stability berm stockpile area and new emergency outlet extension below the dam. As summarized in Table 3.3-8, permanent impacts to 17 acres of Riversidean sage scrub, 11 acres of southern willow woodland and scrub, and one acre of coyote brush scrub would result from the construction of the stability berm below the dam, portions of the haul road, and the emergency outlet extension's open channel alternative (Figure 3.3.6). The underground emergency outlet extension alternative would permanently impact the same amount of southern willow woodland and scrub and coyote brush scrub, but would have 9 acres of permanent impacts to Riversidean sage scrub. Temporary project impacts include approximately 24 acres of southern willow woodland along the east shore of the reservoir.

Cooper's hawk, white-faced ibis, loggerhead shrike, and golden eagle were observed on the project site during field surveys. Nine other special-status bird and bat species were found to have moderate to high potential to occur on the project site including the burrowing owl, white-tailed kite, mountain plover, California horned lark, San Diego cactus wren, yellow-breasted chat, southern California rufous-crowned sparrow, Bell's sage sparrow, tricolored blackbird and western mastiff bat.

Temporary and permanent impacts on Riversidean sage scrub, non-native grasslands, southern willow woodland and scrub and other plant communities present on-site would result in the loss of habitat for these species within the project site. The CDFG Code Sections 3503 and 3503.5 and the Federal MBTA of 1918 also prohibit the possession and destruction of birds, nests, and/or their eggs. In order to reduce potentially significant impacts to a less than significant level, the following mitigation measures shall be implemented.

Mitigation Measures

> **Mitigation Measure 3.3-7a:** DWR shall have a qualified biologist conduct a pre-construction spring/summer active season reconnaissance survey for nesting/roosting coastal California gnatcatcher, burrowing owl, special-status bird and bat species, and other nesting birds within 150-feet of the construction limits of each project element to determine and map the location and extent of special-status species occurrence(s) that could be affected by the project.
>
> If burrowing owls are found to be present, appropriate protocol surveys must be conducted. Avoidance of burrowing owls during the nesting season shall be required, and if burrowing owls are found outside of the nesting season they shall be relocated by a qualified biologist in consultation with the USFWS and CDFG.

Mitigation Measure 3.3-7b: DWR shall avoid direct impacts on any nesting birds located within the limits of construction. This could be accomplished by establishing the construction right of way and removal of plant material outside of the typical breeding season (February 1 through August 31).

Mitigation Measure 3.3-7c: If construction and vegetation removal is proposed for the bird nesting period February 1 through August 31, then active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and in consultation with the USFWS and CDFG. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

Mitigation Measure 3.3-7d: If a natal bat roost site is located within the limits of construction during pre-construction surveys, it shall be avoided with non-disturbance buffer zone established by a qualified biologist in consultation with the USFWS and CDFG until the site is abandoned.

Mitigation Measure 3.3-7e: DWR shall minimize impacts on documented locations of special-status species and any nesting birds by reducing the construction right-of-way through areas of occurrences to either avoid the occurrence or reduce impacts to the minimum necessary to complete the project.

Mitigation Measure 3.3-7f: DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the project that also would avoid and minimize impacts on special-status wildlife species.

Significance after Mitigation: Less than Significant.

Fisheries

Impact 3.3-8: Implementation of the proposed project would result in the alteration of the population structure and composition of the recreational warm-water non-native fishery of Lake Perris.

The emergency drawdown in 2005 has caused a decrease in water depth around the lake and has resulted in the loss of shallow water habitat (3 to 10 feet in depth), which normally provides important spawning and rearing areas for warm-water game fish in Lake Perris. The lower water level forces small fish into deeper water where there are higher chances of predation due to the loss of cover and habitat. In addition, construction activities including blasting for the new outlet tower could impact fish in the near proximity. The excavation of the borrow area could also result in the reduction of shallow-water habitat and an increase in deep water habitat once the reservoir is refilled. As a result, aquatic vegetation may be unable to establish in the deep water areas. Aquatic vegetation normally acts as spawning and rearing habitat for fish. Impacts to the fishery could result from the loss of shallow-water habitat.

According to data from the CDFG, the population structure of Lake Perris is shifting due to the effects of the drawdown. Recent (2006) surveys show that the number of largemouth bass, 12 inches in length or larger has decreased by approximately 40 percent compared to pre-drawdown levels. Lake temperatures have historically not been suitable for reproduction of rainbow trout, though some 'holdovers' survive from season to season. Increases in lake temperatures appear to have reduced the number of holdover rainbow trout, thus reducing the larger sized fish. The number of young largemouth bass, bluegill, and redear sunfish are also below average. These species are not reproducing at levels high enough to sustain current populations, likely due to an increase in predation and a decrease in suitable spawning habitat. However, on the whole, fish concentrations appear to be higher due to the 40 percent decrease in water volume. Appendix C: Biological Resources Appendix includes an assessment of the 2007 status of the fishery at Lake Perris

Lake Perris is a man-made lake not within any historic watercourse that ever supported native fishes. The lake currently supports regularly stocked, as well as self-sustaining populations of non-native warm-water game fishes. The lake is managed for its fishery by CDFG and State Parks as a public trust asset. Impacts to individual fish affected during construction would not be a significant impact since these species are not considered sensitive species. However, DWR will implement Mitigation Measure 3.3-8 in an effort to help restore fish populations at Lake Perris once the water level has been returned to its normal operating elevation. The potential impact to the fishery at Lake Perris as a public trust asset is discussed in the Recreation section of this EIR.

Mitigation Measures

Mitigation Measure 3.3-8: DWR in consultation with the Lake Perris SRA and CDFG shall plan for restoration of the fishery resource at Lake Perris to a sustainable population that supports recreation uses.

- DWR shall fund habitat placement and fish monitoring in Lake Perris for three years, once the lake level is restored to Elevation 1588, under an agreement with CDFG.
- DWR shall continue to coordinate and work with CDFG on appropriate activities to restore fish levels after reservoir restoration for a three year period. These efforts may include additional habitat placement and/or fish stocking.

Significance after Mitigation: Less than Significant.

Impact 3.3-9: Implementation of the proposed project would result in the loss of shallow water habitat (3 to 10 feet) on the northeastern end of the lake which could impact spawning and rearing habitat for the non-native warm-water game fish and food resources for resident and migratory winter waterfowl.

The excavation of approximately two million cubic yards of soil from the borrow area at the east end of the lake would result in the reduction of shallow water habitat and an increase in deep water habitat once the lake is filled back to normal operating levels. As a result, aquatic vegetation would be unable to re-establish in these areas due to the lack of light at the deeper

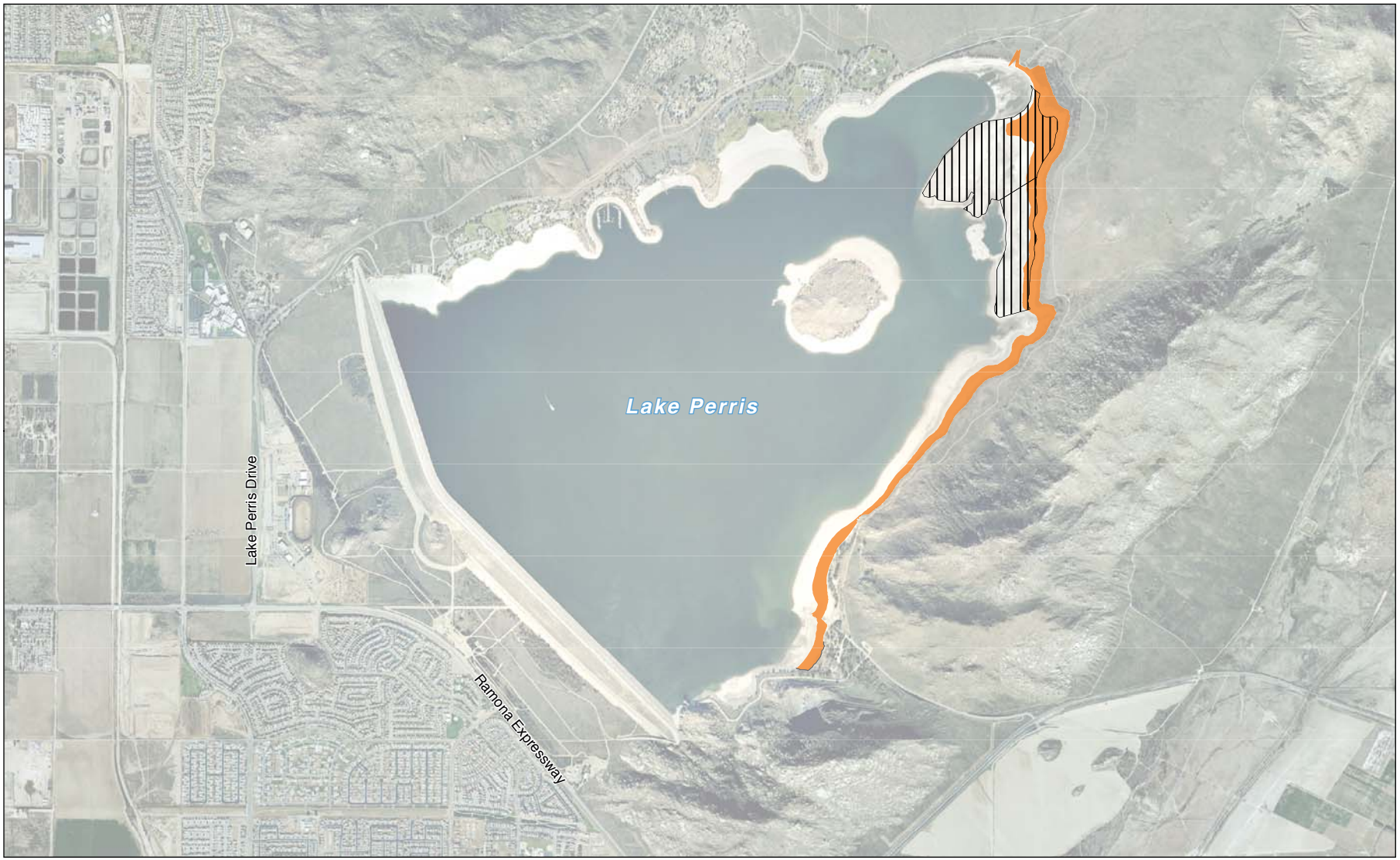
levels. Aquatic vegetation supports aquatic invertebrates and both can be used as a food source by waterfowl and fish. Aquatic vegetation is also used as spawning and rearing habitat by fish. Many of the warm-water fish stocked in the lake, including redear sunfish and largemouth bass nest in waters with depths of less than 10 feet. Some fish, such as the bluegill, require depths of two feet or less. As the fish populations in Lake Perris are non-native recreational fish, from a special-status species standpoint, impacts resulting from the borrow area excavation on the non-native fish populations are considered to be less than significant.

Thousands of migratory and wintering waterfowl use the habitat resources on and around Lake Perris for foraging, roosting, and resting. The use of the lakebed as a borrow area would result in the loss of some of the available freshwater marsh and shallow water habitat along the northeastern edge of the lake where waterfowl tend to congregate to feed. **Figure 3.3-7** shows the extent of shallow water areas (10 foot depth or less) within the proposed borrow area. The project would reduce the shallow-water habitat from approximately 93 acres under pre-drawdown conditions, to approximately 69 acres—a loss of 24 acres (see Waterfowl Analysis Memo included in Appendix C). As shown in the Waterfowl Analysis Memo, the borrow area would reduce the amount of shallow water habitat available by approximately 26 percent, but the large majority of the lake and lake edge would still be available to waterfowl for shallow water resources. Mitigation Measures 3.3-8, 3.3-9a and 3.3-9b require that DWR implement a restoration plan to encourage the return of shallow water habitat along the lake's edge. Once construction is finished and efforts have been made to improve the shoreline habitat and recover fish population, waterfowl are expected to return to the lake in numbers similar to pre-drawdown conditions.

DWR has also been funding 15 acres of waterfowl pond rehabilitation at the San Jacinto Wildlife Area to mitigate for the temporary loss of waterfowl hunting opportunities, waterfowl food production and riparian vegetation. Following implementation of mitigation, the effects to migratory water fowl would be less than significant.

Mitigation Measures

> **Mitigation Measure 3.3-9a:** In order to minimize impacts to shallow water breeding and rearing habitat for the non-native warm water fish and waterfowl resources around the eastern reservoir edge, the borrow area shall be established with a 125-foot no disturbance buffer zone between the inside reservoir edge of the riparian habitat and the edge of the borrow area. The 125-foot buffer would create a shallow bench around the reservoir edge and promote aquatic plant growth that would provide habitat for invertebrates and cover for fishes. Variable size rocks and rip rap shall be placed along portions of the borrow area in areas that would not generate hazards to boats. Gravel shall be placed on the shelf areas created by new excavation and maintained shallow water habitat, to promote spawning areas. Rootwads or other habitat enhancement structures intended to provide cover for fishes and generate foraging and spawning habitat, shall be placed within the rip rap and rocks where they do not present a hazard to boating.



Lakebed above 1578 Elevation (92.84 Acres)
Proposed Borrow Area

0 3,500
Feet

SOURCE: GlobeXplorer, 2007; DWR, 2008; ESA, 2008.

DWR - Perris Dam Remediation Program . 206008.02

Figure 3.3-7
Shallow Water Area
within Proposed Borrow Area

Mitigation Measure 3.3-9b: DWR shall minimize the borrow area size to the extent feasible, leaving as much of the previous shallow water shoreline as possible. The final designs given to the contractor will include a detailed construction zone limitation that identifies a minimum shoreline buffer zone.

Implement **Mitigation Measure 3.3-8**

Significance after Mitigation: Less than Significant.

Waters of the U.S. and State

Impact 3.3-10: Implementation of the proposed project would result in the temporary and permanent impacts to southern willow woodland and scrub, freshwater marsh and other waters of the U.S. and waters of the State within Lake Perris under the jurisdiction of the Corps pursuant to the Clean Water Act and CDFG pursuant to Section 1602 of the Fish and Game Code (Streambed Alteration Agreements).

Some areas within the project could be categorized as wetland habitats and may fall under the jurisdiction of the Corps and/or CDFG. Potentially significant impacts from the alteration of Lake Perris within Corps and/or CDFG jurisdiction would be mitigated to a less-than-significant level with restoration of temporarily affected habitats and compensation for permanently affected habitats. The area within the exposed lakebed and along the original shoreline is considered to be Corps jurisdictional. The riparian area below the dam is not considered to be Corps jurisdictional.

DWR would obtain Clean Water Act regulatory compliance in the form of a permit from the Corps or written documentation from the Corps that a permit is not required. In permitting projects, the Corps seeks to meet the goal of no net loss of functions and values of wetlands and other waters of the U.S. and would require at a minimum the restoration of disturbed areas to original contours and a revegetation program to restore areas of jurisdictional habitat disturbed by the proposed project.

DWR shall obtain California Fish and Game Code Section 1602 compliance in the form of a completed Streambed Alteration Agreement or written documentation from the CDFG that an agreement is not required. DWR shall implement all the terms and conditions of the CDFG Streambed Alteration Agreement.

Significance: Less than Significant.

Habitat Conservation Plan

Impact 3.3-11: Implementation of the proposed project would conflict with the provisions of the Western Riverside MSHCP or the Long-Term Stephens' Kangaroo Rat HCP.

Western Riverside County MSHCP

As discussed throughout this section, the project falls within the Western Riverside County MSCHP. The Western Riverside County MSHCP involves the assembly and management of a 500,000-acre Conservation Area for the conservation of natural habitats and their constituent wildlife populations. The approval of the MSHCP and the Implementing Agreement (IA) by the USFWS and the CDFG allows signatories of the IA to issue "Take" authorizations for the 146 species covered by the MSHCP (termed "covered species"), including state and federally listed species as well as other identified special-status species. The "take" authorization includes impacts to the habitats of the covered species. The Western Riverside County MSHCP includes the entire western riverside county, and any new development in this area is required to pay an acreage fee established by the County in Ordinance No. 810 and 810.2, to support the financing for the MSHCP. The fee provides for compliance with FESA and CESA. The MSHCP is further broken down into core areas and linkages which are the focus of reserve and preservation actions. The proposed project lies within Core H, which is comprised of Lake Perris SRA, San Jacinto Wildlife Area, private lands and lands with pre-exiting conservation agreements. Core H provides habitat for wildlife species (discussed under impacts listed above) and contains soils suitable for some Narrow Endemic Plant Species (covered below under MSHCP Section 6.1.3/6.1.4). The project does not lie within any of the proposed or existing criteria areas or any wildlife movement corridors. Furthermore, the proposed project is in compliance with the MSHCP's *Activities Outside of Criteria Area Requirements*, which states:

> Public and private Development, including construction of buildings, structures, infrastructure and all alterations of the land, that are carried out by Permittees, Participating Special Entities, Third Parties Granted Take Authorization and others within the Plan Area, that are outside of the Criteria Area are permitted under the Plan, subject to consistency with MSHCP policies that apply outside the Criteria Area (such as policies related to riparian and riverine areas and vernal pools, narrow endemic plant species, additional survey needs and procedures, and funding/fee issues).

Additional Plan Wide Requirements that may apply to areas outside the MSHCP Criteria Areas are outlined in Sections 6.1.2 (Riverine/Riparian, Vernal Pool, and Fairy Shrimp Habitat), Section 6.1.3 (Narrow Endemic Plant Species Surveys), Section 6.3.2 (Criteria Area Species Surveys, which covers additional survey needs and procedures), and Section 6.1.4 (Urban/Wildlands Interface Requirements) of the Western Riverside County MSHCP. The site is expected to have the potential for narrow endemics and criteria area species as listed in Sections 6.1.3, and 6.3.2, refer to Table 3.3-7, Western Riverside County MSHCP column, for information regarding which species are covered under each section. Implementation of Mitigation Measure 3.3-1c would mitigate for any impacts associated with development within the Western Riverside County MSHCP Fee area.

MSHCP Section 6.1.2

According to field surveys, the site does not contain any vernal pool or fairy shrimp habitat, however, there are areas of riparian habitat located below the dam and along the eastern portion of the lake. Mitigation Measures 3.3-9a would maintain a 125 foot buffer between the riparian area along the eastern portion of the lake and any construction disturbance within the borrow area and haul road. Mitigation Measures 3.3-3a would help maintain the health of the riparian area, due to the new watering regimen and Mitigation Measures 3.3-1a and 3.3-1b would help improve the transition of the riparian area between the drawdown and re-filling of the lake. Implementation of the abovementioned mitigation measures would ensure consistency with the MSHCP for the riparian area along the eastern portion of the lake. A portion of the riparian area below the lake would be removed due to the construction of the new stability berm. With implementation of Mitigation Measures 3.3-1 through 3.3-1c, 3.3-3a, and 3.3-9a the project would be consistent with this portion of the MSHCP.

MSHCP Section 6.1.3/6.1.4

The MSHCP identifies requirements for the protection of narrow endemic plants and for urban-wildland interface areas. Narrow Endemic Plant Species identified by the Riverside County Integrated Project (RCIP) Conservation Summary Report Generator for the emergency outlet extension project component area west of Lake Perris Drive includes, San Diego ambrosia, many-stemmed dudleya, spreading navarretia, California orcutt grass, and Wright's trichocoronis. Rare plant surveys were conducted for the entire project area and none of the above listed plant species were observed, therefore the project is consistent with this portion of the MSHCP. The Lake Perris SRA is surrounded to the north and east by undeveloped land. Development is expanding west and south of the SRA. With the implementation of Mitigation Measure 3.3-1b and 3.3-3a the project would be consistent with this portion of the MSHCP.

MSHCP Section 6.3.2

The MSHCP requires habitat assessments to be conducted for the burrowing owl and the Los Angeles pocket mouse throughout much of the project impact area. Implementation of Mitigation Measures 3.3-6a through 3.3-6e and 3.3-7a would reduce the impact on the Los Angeles pocket mouse to a less than significant level and would ensure consistency with the MSHCP.

Identified Criteria Area plant species which require habitat assessments were identified for the emergency outlet extension project component area west of Lake Perris Drive. These species include: Coulter's goldfields, Davidson's saltscale, little mousetail, mud nama, Parish's brittlescale, round-leaved filaree, San Jacinto Valley crownscale, smooth tarplant, and thread-leaved brodiaea. Rare plant surveys were conducted in 2008 for the entire project area and none of the above listed plant species were observed, therefore the project is consistent with this portion of the MSHCP.

Stephen's Kangaroo Rat HCP

The proposed project falls within the SKR HCP fee area. The SKR HCP mitigates impacts from development on the SKR by establishing a network of preserves and a system for managing and

monitoring them. Through implementation of the SKR HCP, more than $45 million has been dedicated to the establishment and management of a system of regional preserves designed to ensure the persistence of SKR in the plan area. This effort has resulted in the permanent conservation of approximately 50 percent of the SKR occupied habitat remaining in the HCP area. The HCP requires that direct and indirect impacts to the Stephens' kangaroo rat, including habitat destruction of occupied land be mitigated either via on-site preservation of land, or the payment of the mitigation fee set out by the County ordinance. Mitigation fees are used to finance the implementation of the Stephens' Kangaroo Rat HCP. Currently, the areas of project disturbance are not occupied by SKR (according to protocol SKR surveys conducted at Lake Perris in 2008) and have not been historically occupied by SKR. However, should the area become occupied implementation of Mitigation Measure 3.3-11 would ensure compliance with Riverside County Ordinance 663.10.

Mitigation Measures

Mitigation Measure 3.3-11: In order to comply with the Stephens' Kangaroo Rat HCP, the project shall be reviewed by the RCHCA. If occupied habitat is permanently affected by the project, DWR shall acquire compensation lands adjacent to a potential habitat reserve site at a 1:1 ratio or pay the $500 per acre mitigation fee set out by Riverside County Ordinance 663.10 or as required by the RCHCA.

Implement **Mitigation Measures 3.3-1a through 3.3-1c, 3.3-3a, 3.3-6a through 3.3-6e, 3.3-7a, and 3.3-9a**

Significance after Mitigation: Less than Significant.

Mitigation Measure Summary Table

Table 3.3-9 presents the impacts and mitigation summary for Biological Resources.

TABLE 3.3-9
BIOLOGICAL RESOURCES IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Riparian Vegetation: The lowering of the lake level has resulted in a temporary impact to the pre-drawdown lake shore habitat dominated by riparian plant species. In addition, construction of the stability berm will permanently remove a portion of the similar habitat type found below the dam.	3.3-1a through 3.3-1c	Less than Significant
Special-Status Plant Species: Implementation of the proposed project could result in the loss of endangered, threatened, candidate, or rare plant species listed under the federal or state Endangered Species Acts, or plants designated as rare by the CNPS.	None required	--

TABLE 3.3-9
BIOLOGICAL RESOURCES IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Least Bell's vireo: Implementation of the proposed project would result in permanent and temporal loss of southern willow woodland and scrub habitat which provides nesting habitat for the least Bell's vireo.	3.3-1a through 3.3-1c, 3.3-3a, and 3.3-3b	Significant and Unavoidable
Stephens' Kangaroo Rat: Implementation of the proposed project would result in the permanent and temporary loss of non-native annual grassland habitat presumed to support the federally listed endangered Stephens' kangaroo rat.	3.3-4	Less than Significant
Avian species: Implementation of the proposed project would result in temporary impacts to migratory avian species due to temporary loss of southern willow woodland habitat and due to disturbance of construction activities.	3.3-1a through 3.3-1c, 3.3-3a, and 3.3-5a through 3.3-5c	Significant and Unavoidable
Special-status ground dwelling species habitat: Implementation of the proposed project would result in the permanent and temporary loss of Riversidean sage scrub, southern willow woodland and scrub, non-native grassland and other habitats which may support non-avian ground dwelling special-status species such as the northern red diamond rattlesnake, coastal western whiptail, San Diego pocket mouse, the Los Angeles pocket mouse, San Diego black-tailed jackrabbit, American badger and other special-status ground dwelling non-avian wildlife species.	3.3-6a through 3.3-6e	Less than Significant
Special-status avian species habitat: Implementation of the proposed project would result in permanent and temporary loss of Riversidean sage scrub, southern willow woodland and scrub, and other habitats which may support the formally listed endangered coastal California gnatcatcher, as well as a number of special-status avian species including the burrowing owl, golden eagle, Cooper's hawk, white-faced ibis and other special-status avian and bat species.	3.3-7a through 3.3-7f	Less than Significant
Fisheries: Implementation of the proposed project would result in the alteration of the population structure and composition of the recreational warm-water non-native fishery of Lake Perris.	3.3-8	Less than Significant
Shallow Water Habitat: Implementation of the proposed project would result in the loss of shallow water habitat (3 to 10 feet) on the northeastern end of the lake which could impact spawning and rearing habitat for the non-native warm-water game fish and food resources for resident and migratory winter waterfowl.	3.3-8, 3.3-9a and 3.3-9b	Less than Significant

TABLE 3.3-9
BIOLOGICAL RESOURCES IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Waters of the US: Implementation of the proposed project would result in the temporary and permanent impacts to southern willow woodland and scrub, freshwater marsh and other waters of the U.S. and waters of the State within Lake Perris under the jurisdiction of the Corps pursuant to the Clean Water Act and CDFG pursuant to Section 1602 of the Fish and Game Code (Streambed Alteration Agreements).	None required	--
Habitat Conservation Plan: Implementation of the proposed project would conflict with the provisions of the Western Riverside MSHCP or the Long-Term Stephens' Kangaroo Rat HCP.	3.3-1a through 3.3-1c, 3.3-3a, 3.3-6a through 3.3-6e, 3.3-7a, and 3.3-9a	Less than Significant